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CONTENTS AND SUBJECT INDEX

The Treatment of Functional Uterine Hemorrhage. Emil Novak, M.D., Baltimore 1105

Surgery in the Presence of Diabetes. E. Starr Judd, M.D.; Russell M. Wilder, M.D., and S. Franklin Adams, M.D., Rochester, Minn.....1107

Occurrence of Throat Infections with Streptococcus Scarlatinae Without a Rash. Franklin A. Stevens, M.D., and A. R. Dochez, M.D., New York..1110

The Pathologic Physiology of Experimental Gangrenous Pancreatitis. Lucia E. Tower, Chicago.....1112

Liver Function Tests: A Comparative Study of Five Methods in One Hundred Clinical Cases. Samuel S. Berger, M.D.; Milton B. Cohen, M.D., and J. J. Selman, M.D., Cleveland.1114

Significance of the Blood Chemical Changes in Pertussis: Therapeutic Indications. Joseph C. Regan, M.D., and Alexander Tolstouhov, M.D., Brooklyn 1116

Use of Iodized Oil in Diagnosis and Treatment of Bronchial Affections. Stuart Pritchard, M.D.; Bruce Whyte, M.D., and J. K. M. Gordon, M.D., Battle Creek, Mich.....1119

Omentopexy in Cirrhosis of the Liver: Report of Case. Frederick W. Lester, M.D., Seneca Falls, N. Y.....1123

Paroxysmal Tachycardia Associated with Focal Myocarditis. Ralph H. Major, M.D., and H. R. Wahl, M.D., Kansas City, Kan.....1125

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Cutis Verticis Gyrata. Raymond J. Sisson, M.D., Detroit.....1126

Cancer of Stomach. John W. Shuman, M.D., Los Angeles.....1127

Unusual Articulation of the Astragalus and the Os Calcis. Charles E. Farr, M.D., New York.....1128

Multiple Sacculations of the Esophagus. Jacob Buckstein, M.D., New York 1128

SPECIAL ARTICLE

The Technic of Medication: Fifteenth Article. Bernard Fantus, M.D., Chicago 1129

EDITORIALS

A Criticism of Modern Medicine...1132

Acrodynia, Erythredema or Swift's Disease? 1132

Investigation on Stream Pollution..1133

CURRENT COMMENT

Renal Vasoconstriction and Albuminuria 1134

Convicted Director of Education Now Seeks Higher Office.....1135

Archives of Disease in Childhood..1135

(Subject Index on next page)

ASSOCIATION NEWS 1135

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SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "T," Therapeutics; "MI," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics.

A. M. A., Dallas Session news....1137
annual congress on medical education....1135
Abortion, syringe to induce, dangers....ab-1176
Abscess, turpentine fixation....ab-1168
Acidity, intestinal regulation....ab-1173
Acrodynia, erythredema or Swift's disease?....E-1132
Alastrim in Congo region....1144
Albuminuria of new-born....ab-1173
renal vasoconstriction and....E-1134
Amebiasis, urinary....ab-1169
Anaphylaxis shock....ab-1171
serum, for 19 years....ab-1169
Anemias, icterus index test in....ab-1162
Anesthesia, procaine, and paralytic ileus...1152
Anthrax bacillus vs. *pu*....1145
Appendicitis, blood picture in,....ab-1172
Appendicostomy for thirst....ab-1166
Apples, arsenic contamination....1143
Archives of Disease in Childhood....E-1135
Association News....1135
Asthma, bacterial vaccines in....ab-1159
ultraviolet rays in....ab-1170
Astragalus, unusual articulation....*1128
Atrophy, muscular, progressive....ab-1175
Bile Ducts disease, psychology of....ab-1169
Blood, bactericidal power....ab-1176
calcium content....ab-1176
chemistry in pertussis....*1116
pressure, high....ab-1160
pressure, venous, in legs....ab-1175
pressure, watermelon seed lowers....ab-1159
proteins in diseases....ab-1173
sugar and water metabolism....ab-1174
urea nitrogen concentration....ab-1168
uricoxydase....ab-1175
Book Notices....1154
Books Received....1155
Breast inflammation....ab-1175
hyperplasias, epithelial....ab-1165
Breathing type and body....ab-1174
Bronchiectasis, iodized oil in....*1119
Bronchopneumonia, chronic, in syphilis.ab-1170
Bronchus, roentgen study....*1119
Burns, protein cleavage in....ab-1172
Cadaver, syphilis infection from....ab-1174
Calcaneum, unusual articulation....*1128
Cancer, dermography of....ab-1170
control, Italy....1147
photochemical serum test....ab-1175
Carbohydrate metabolism....ab-1176
Carbuncle, metastasis to prostate in....ab-1170
Cardiovascular patient, rehabilitation....ab-1164
Cerebrospinal Fluid, indexes of....ab-1161
Chenopodium, oil of, death from....ab-1175
Chickenpox myelitis....ab-1165
Corpus Luteum hormone....ab-1164
necrosis....ab-1164
Correspondence....1151
Cushny, A. R....1144
Cutis verticis gyrata....*1126
Deaths....1142, 1148
Dementia praecox and meningitis....ab-1163
Diabetes Insipidus with osteitis....ab-1159
Diabetes Mellitus, blood alkalinity in...ab-1160
coma....ab-1173
permeability and....ab-1171
surgery in....*1107
Diarrhea, tannins in....ab-1168
Digestion, salivary....ab-1161
Digitalis, massive doses....ab-1166
Distemper research....1143
Divorce and latent syphilis....ab-1174
Drugs, furnishing and prescribing....ab-1174
Austrian decree on....ab-1173
Duodenum, surgery....ab-1163, ab-1172
Echinococcosis in New South Wales....ab-1167
Eclampsia, blood calcium in....ab-1164
Emphysema, treatment....ab-1175
Encephalitis, comparative anatomy of....ab-1173
epidemic, blood sugar curves in....ab-1161
Endocarditis, mercurochrome in....ab-1168
subacute bacterial....ab-1160
Endocrines vs. metabolism....ab-1159
Epinephrine output vs. nicotine....ab-1168
Erythrocytes production vs. radiation....ab-1159
Esophagus, diverticula....ab-1160
multiple sacculations of....*1128
Evidence, physical examination of plaintiff, compulsion....MI-1157
Evolution and great apes....1156
Feces, *ph* of....ab-1173
tubercle bacilli in....ab-1167
Fecundity of Japanese women....1146
relative....1147
Foot, "dangle foot"....ab-1164
ulcer, perforating....1152
Foreign Letters....1143
Gangrene, sympathectomy in....ab-1172
Glycosuria, renal, glucose utilization in..ab-1160
Goiter question....ab-1174
simple endemic....ab-1167
Government Services....1142
Harrison Narcotic Act, prescriptions, liability of pharmacist....MI-1157
Heart disease in tuberculous....ab-1161
electrocardiogram in heart disease....ab-1160
electrocardiogram in myxedema....ab-1159
Heliotherapy....ab-1161
Helminthophobia....ab-1176
Hemoglobin, precipitins of....ab-1168
Herniotomy in infants....ab-1166
muscle and fascia suture in....ab-1164
Hip Joint deformity, molding callus for.ab-1164
Hormone action, phases of....ab-1173
Hospitals, charitable, liability of roentgenologist....MI-1158
Hyperthyroidism and castration....ab-1175
in children....ab-1164
Infection, focal, vs. prostate....ab-1163
focal, from tooth extraction....ab-1161
focal typhoid infections....ab-1160
focal, vs. tachycardia and myocarditis...*1125
Insulin and glycogen storage....ab-1172
resorption and....ab-1173
Intestines, diverticula, etiology....ab-1166
ileus, paralytic....1152
Iodized Oil in bronchial affections....*1119
Kidney function, stain test of....ab-1176
injury causes testicle tenderness....ab-1174
insufficiency, blood phenol in....ab-1173
vasoconstriction and albuminuria....E-1134
Laboratory tests, reduced charges for....1143
Labor, sodium citrate in....ab-1170
Lead poisoning, industrial....ab-1162
Legs, artificial, disturbances from....ab-1175
Leukemia, hemorrhagic purpura in....ab-1168, ab-1169
Leukocyte counts, peripheral....ab-1172
License, revocation of....ab-1136
Licensure, annual congress on....1135
fraudulent diploma....ab-1136
in Connecticut....ab-1135
reregistration in Iowa....ab-1136
Ligaments, cruciate, repair of....ab-1165
Liver, cirrhosis, omentopexy in....*1123
ferments, intracellular....ab-1172
function tests compared....*1114
injury in thyrotoxicosis....ab-1160
Lung, abscess, treatment of....ab-1159
Lymphogranulomatosis in child....ab-1173
Malaria in New England....ab-1161
Malpractice, fractures, degree of care required....MI-1157
Marriages....1148
Measles, antiserum experiences....ab-1174
contagiousness of....ab-1173
serum, Degkwitz'....ab-1173
serum prophylaxis....ab-1174
Mediastinum, tumor of....ab-1172
Medical Education, Registration....1153
Medication, technic of....*1129
Medicine, modern, criticism of....E-1132
Medicolegal....1157
Meetings, Coming Meetings....1158
Meningitis and dementia praecox....ab-1163
Meningoneuritis of acoustic nerve....ab-1169
Mercuric chloride, effects of....1153
Metabolism vs. endocrines....ab-1159
abdominal spasms and....ab-1171
disorders, peripheral....ab-1173
Miller, W. H. H., seeks higher office....E-1135
Myelitis, chickenpox....ab-1165
Myocarditis, focal, with tachycardia....*1125
Myxedema, electrocardiogram in....ab-1159
Neck, tumor of....ab-1165
Neo-arsphenamine in sclerosis....ab-1173
Nephritis, scarlatinal....ab-1166
Nerve, phrenicotomy.ab-1168, ab-1169, ab-1170
Nervous System, fat in....ab-1173
Neuritis of ulnar nerve....ab-1165
New and Nonofficial Remedies....1131
News....1138
Nitrobenzenes are poisonous....ab-1162
Omentopexy in liver cirrhosis....*1123
Osteitis fibrosa polycystica....ab-1159
Ovary, lactic acid in....ab-1175
Oxygen pressure vs. cell growth....ab-1176
Palate, soft....ab-1174
Pancreatitis, gangrenous, experimental....*1112
Paraguay, diseases in....ab-1172
Paralysis, general, of long duration....ab-1167
Pellagra, morbid anatomy of....ab-1166
Peptic Ulcer, chronic character of....ab-1174
surgical treatment....ab-1163
test glycemia with....ab-1172
vs. gastric acidity....ab-1171
Pericardium, calculi....ab-1171
Peritonitis, thoracic duct in....ab-1172
Pharynx, cancer, surgery of....ab-1166
Pills in medication....*1129
Pituitary extract by alimentary canal..ab-1166
Placenta, lactic acid in....ab-1175
Poliomyelitis in Australia....ab-1166
Pollen therapy....C-1151
Powders in medication....*1130
Prohibition in Russia....ab-1175
in America and tuberculosis....ab-1175
Propaganda for Reform....1150
Prostate, massage of....ab-1175
metastasis to, in carbuncle....ab-1170
rôle in focal infections....ab-1163
Prostatectomy, preparation for....ab-1164
Queries and Minor Notes....1152
Raynaud's Disease, arterioles in....ab-1169
negative pressure in....ab-1163
Rays, biologic action of....ab-1173
Reflex, trigeminal....ab-1165
Relapsing Fever, arsphenamine in....ab-1172
Rheumatism, cardiac complications....ab-1160
Rib fracture, traction on sternum in....ab-1164
Rickets, new substances for....ab-1162
Saliva, elimination by....ab-1170
salivary digestion....ab-1161
Scarlet Fever in Far East....ab-1167
Dick test in Belgium....1144
nephritis....ab-1166
streptococcus toxin in....ab-1171
Sclerosis, multiple, treatment....ab-1173
Scopolamine and acid-alkali balance....ab-1171
Semilunar Cartilage, cysts of....ab-1164
Septicemia, mercurochrome in....ab-1163
Serum, surface tension....ab-1173
Snake bite, treatment of....1153
Society Proceedings....1158
Spine, fractures, treatment....ab-1172
tuberculous spondylitis....ab-1172
Spirochetosis in horses....ab-1171
Stain, Romanowsky, buffered water for..ab-1173
State Board Examinations....1153
Stomach acidity vs. alcohol....ab-1171
acidity vs. gastric ulcer....ab-1171
cancer....*1127
surgery....ab-1163
Streptococcus scarlatinae infections without rash....*1110
species of....ab-1171
Surgery, sodium citrate in....ab-1170
morbidity, reduction of....ab-1163
sugar in preparation for....ab-1170
Swimming pools and vaginal smears....1153
Sympathectomy in gangrene....ab-1172
Synovial Fluid, physiology....ab-1160
Syphilis, blood changes in....ab-1172
congenital, bronchopneumonia in....ab-1170
infection from cadaver....ab-1174
latent, and divorce....ab-1174
Tachycardia, paroxysmal, with myocarditis.*1125
Teeth, extraction, tragedies of....ab-1161
Tetra-Ethyl Lead, is it poisonous?....ab-1162
Thirst, postoperative, appendicostomy for.ab-1166
Throat infections from Streptococcus scarlatinae....*1110
Thrombocytopenia, essential....ab-1160
Thyroidectomy....ab-1174
Thyrotoxicosis, liver injury in....ab-1160
Tonics and Sedatives....**Adv. page 22**
Trypanosomiasis in monkeys....ab-1171
Bayer 205 in....1144
Tubercle bacilli in feces....ab-1167
Tuberculin reaction, normal....C-1151
Tuberculosis, heliotherapy in....ab-1161
experimental immunization against....ab-1168
pulmonary, metal salts in....ab-1176
pulmonary, premenstrual temperature in.1152
treatment, gold....ab-1176
vs. prohibition....ab-1175
Typhoid epidemic....ab-1172
infections, focal....ab-1160
vaccination, agglutinins after....ab-1171
Urachus, closed cyst of....ab-1169
Urethrotomy, internal....ab-1165
Urine, incontinence, urethra in....ab-1175
pentosuria, familial....ab-1160
Uterus, fibromyoma, treatment....ab-1164
hemorrhage, treatment....*1105
retrodisplacement treatment....ab-1169
retroflexion, movable....ab-1170
Vital Capacity of surgical patients....ab-1161
Vital Statistics, England....1143
Vitamin A....ab-1167
new work on vitamins....1156
Water metabolism....ab-1160, ab-1174
pollution, investigation on....E-1133
Whooping Cough, blood in....*1116

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THE TREATMENT OF FUNCTIONAL UTERINE HEMORRHAGE *

EMIL NOVAK, M.D.

BALTIMORE

In the great majority of cases of uterine hemorrhage, the indication for treatment is perfectly clear. A definite anatomic lesion can be demonstrated in one of the pelvic organs, and the removal of such a lesion is the sine qua non for the cure of the abnormal bleeding. For example, the most common of all causes of persistent uterine hemorrhage is incomplete miscarriage, and the spontaneous or operative removal of the retained gestation products is followed by a cessation of the bleeding. In the same way, bleeding due to pelvic neoplasm or to pelvic inflammatory disease necessitates removal of the lesion.

In a much smaller but still not inconsiderable group of cases, however, uterine bleeding may be observed in the entire absence of any demonstrable gross lesions of the pelvic organs. Indeed, extremely profuse hemorrhage may occasionally be observed in children at or near the age of puberty. Far more frequently such bleeding is noted in women at or near the menopausal age, although no period of reproductive life is immune from this possibility. Cases of this type are commonly designated as "functional," "idiopathic" or "essential." The hemorrhages are occasionally mild, and may tend toward spontaneous correction. More frequently, they are sufficiently severe to lead the patient to seek medical advice, and not infrequently they are quite alarming, causing grave concern to both patient and medical attendant. In those cases which occur at or near the climacteric, it can at once be seen why this should be so, for free bleeding at this period brings with it the apprehension of cancer. The diagnostic conflict between climacteric bleeding of functional nature and that due to cancer is thus very frequent, and this fact alone is sufficient to warrant consideration of the less dangerous though less well understood of these two causes of bleeding.

In previous papers,[1] attention has been called to the clinical characteristics of this form of abnormal uterine hemorrhage, and especial stress has been laid on the fact that in by far the largest number of cases, the uterine mucosa yielded by curetting presents a very characteristic picture. This was originally described by Cullen and designated as hyperplasia of the endometrium.[2] I shall not describe the condition in detail here, except to say that it is characterized by a genuine increase in both stromal and epithelial elements, and that perhaps the chief distinguishing feature is a marked disparity of the glands, many of which are large and cystic, while others are quite small. There is thus produced a very characteristic Swiss-cheese pattern, often so marked that a glance through the microscope is sufficient to make the diagnosis. Grossly, the endometrium in some cases is so enormously overgrown that huge quantities are brought away by the curet, and in older women may give rise to a snap diagnosis of malignancy, unless one is accustomed to the naked eye diagnosis of tissue material. Usually, in such cases the mucosa is distinctly polypoid, constituting the condition that has so often in the past been wrongly designated as "polypoid endometritis." Most frequently the endometrial overgrowth is only moderate, and it may be absent altogether.

Certain ovarian lesions have been described as characteristic accompaniments of this endometrial condition, especially an absence of corpora lutea and an increase in the process of follicular maturation and atresia. There is some question as yet as to the invariability of these findings, but they certainly constitute the common ovarian picture in cases of this group. The fact that bleeding of this type occurs only in the reproductive period of the woman's life, that it so commonly recurs after curetting, that it is curable always by removal of the ovaries or by radiotherapy—these and a number of other considerations make it almost certain that the causation is to be sought in an endocrinopathy of some sort. Whether or not this is to be classed as a hypergonadism (hyperoophorism), or just what the real disturbance is, cannot of course as yet be stated.

In a rather large experience with this form of uterine bleeding, from both the clinical and pathologic standpoints, I have been impressed with the fact that the profession as a whole and, indeed, gynecologists as a group, have not yet come to appreciate the real nature and significance of this form of menstrual disturbance, as well as its great importance from the standpoint of differential diagnosis. Too often a diagnosis of "idiopathic" hemorrhage is made without proper measures to exclude the possibility of other and often far more serious lesions, such as cancer. Even when the diagnosis is correct, many practitioners prescribe ergot, stypticin or other drugs of this sort, without any real pharmacodynamic justification. Ergot, for example, is an excellent remedy in cases of uterine hemorrhage due to relaxation or insufficiency of the uterine musculature. It probably has no hemostatic virtue in other forms of hemorrhage, such as those due to a biochemi-

* Read before the Atlantic County Medical Society, Atlantic City, N. J., Jan. 8, 1926.

† From the Gynecological Department, Johns Hopkins University Medical Department.

1. Novak, Emil: Relation of Hyperplasia of Endometrium to So-Called Functional Uterine Bleeding, J. A. M. A. **75**: 292 (July 31) 1920. Novak, Emil; and Martzloff, K. H.: Am. J. Obst. & Gynec. **8**: 385 (Oct.) 1924.

2. Cullen: Adenomyoma of Uterus, 1908, p. 180; Canad. M. A. J. **3**: 658, 1913.

cal or endocrine disturbance. This is not to say that any brilliantly effective medication can be suggested in the group of cases I am describing. My object is rather to outline what I take to be an intelligent plan of management. Unfortunately, it will be seen that from the standpoint of mere medication, the measures recommended below often give results no less disappointing than those obtained from the drugs criticized above, although the rationale of their employment would seem reasonably clear.

METHODS OF TREATMENT

Spontaneous Cure of Mild Cases.—Any one who has taken a large number of menstrual histories will recall the occasional statement that the menstrual periods were very profuse and perhaps irregular for the first year or two after inauguration of the function, but that later the trouble had apparently adjusted itself and the periods had become regular in occurrence and normal in amount. In the same way, it is probable that a certain proportion of cases of moderate "flooding" at the menopausal era, which spontaneously correct themselves, are of this type. It is scarcely necessary to urge that women should not be encouraged to hope for such a happy consummation, and that we should continue our present teaching that no other diagnosis should be entertained until that of malignancy has been excluded.

Diagnostic Curettage.—When the bleeding is sufficiently severe to cause concern in young women, and even more emphatically during middle age, the importance of diagnostic curettage cannot be too strongly urged. In no other way can the nature of the trouble be established. Especially distinctive is the finding of hyperplasia of the endometrium. It is only fair to say that, in a small proportion of cases, this diagnostic finding will fail us; but it is so common that a failure to demonstrate hyperplasia should at least lead to a suspicion of some unsuspected anatomic lesion, such as a submucous myoma or an intra-uterine polyp. Even making such an allowance, however, it appears probable that in a small proportion of cases the endometrium may be perfectly normal. Perhaps the nature of the endocrinopathy has something to do with these variations.

Only by diagnostic curettage can one exclude the existence of adenocarcinoma of the corpus. The far more common type of uterine cancer, i. e., squamous cell carcinoma of the cervix, can usually be readily diagnosed by inspection and palpation, with microscopic examination of biopsy sections in doubtful cases. In cases of bleeding in middle-aged women who are still menstruating, when diagnostic curettage is indicated because of the absence of more obvious causes of the hemorrhage, the benign hyperplasia will be found considerably more often than adenocarcinoma. The latter is much more apt to be noted in women who have passed the menopause.

In most cases, curettage will be followed by relief from the hemorrhage. In many cases this will be permanent, but in a large proportion, certainly in not less than one half, recurrence of the symptoms will be noted, perhaps almost immediately, though in other cases not until many months later. In some cases, the success of a curettage may merely reflect a coincident spontaneous curative tendency; in others, it may perhaps be interpreted as in some way altering the biochemical condition of the endometrium.

Organotherapy.—One hesitates to elaborate on this subject, because the results can scarcely provoke any great degree of enthusiasm. Often, however, they are distinctly gratifying, and certainly organotherapy is far more rational than drug medication. There is much reason to believe that the nature of the endocrinopathy differs in different cases. For example, thyroid extract is usually ineffective, but may occasionally give very striking results. In a girl of 12, on whom I performed a curettage for severe bleeding of three months' duration, which soon recurred, the administration of thyroid extract was followed by prompt cessation of the bleeding. When there are other manifestations of hypothyroidism, thyroid extract should by all means be resorted to, and will often be of great benefit.

In view of the common absence of corpora lutea in the ovaries in these cases, it is not surprising that corpus luteum preparations of one form or another have been advocated in this condition. Suffice it to say that the results have been no more satisfactory here than with ovarian therapy in general.[3] The results of mouth administration are notoriously disappointing, and no very potent extract for subcutaneous or intramuscular administration seems as yet available.

Posterior pituitary extract has also been employed in the treatment of this symptom, and in my own hands has yielded better results than any other form of organotherapy. Daily injections of the pituitary extract (1 cc.) may be given for at least six days, by which time beneficial results should have been noted if they are to occur. It is of course difficult to be sure, when improvement occurs, that it is not due to the action of the extract on the uterine muscle, rather than to any more specific endocrine mechanism.

Repeated Curettage in Recurrent Cases in Young Women.—When, as so commonly occurs, the bleeding returns, even after thorough curettage, the question as to the next step presents itself. In young women, in whom future childbearing is an important consideration, it is not always an easy one to settle. The remarkable development of radiotherapeutic technic in the last few years will impel some to urge these measures without further ado. It is probably true that, as a rule, careful radiotherapy by the expert will relieve the symptom without any unfortunate by-effects. There still seems, however, to be some uncertainty on such points as idiosyncrasy and possible later results on the ova, so that not a few gynecologists hesitate to resort to radiotherapy in young women, unless all other measures fail. A repetition of the curettage, perhaps several times, as the bleeding may demand, is preferred by some, tiding the patient over until the endocrine balance is restored. My own feeling is that, whenever possible, the patient or her family should be taken into our confidence, and the situation presented as fairly as possible. When this is done, my own experience has been that with most young patients, especially when the hemorrhage is not extremely profuse, the selection will be a repetition of curettage, with the slight attendant risk and inconvenience rather than even the slight uncertainty of radium therapy. There are, of course, certain social and economic factors which at times play an important part in arriving at a decision.

Radiotherapy, Especially in Patients at the Menopausal Age.—In women who have lived their reproductive lives, and in whom the matter of further child-bearing need not be considered or, at any rate, is

3. Novak, Emil: Endocrinology 6: 591 (Sept.) 1922.

distinctly subordinate to that of health, the indication is clear for radiotherapy. Here, indeed, we have the almost ideal indication for radium in gynecology, for menstruation can be checked promptly and with certainty. The methods, dosage and mechanism of this procedure need not be discussed in this paper.

Hysterectomy at Menopause Under Certain Conditions.—In uncomplicated cases, there would seem to be no reason for hysterectomy where radiotherapy is available, as it now is almost universally. In cases, however, in which there is some associated lesion indicating laparotomy, hysterectomy is a perfectly justifiable and, of course, an effective procedure, as far as cure of the bleeding is concerned.

26 East Preston Street.

SURGERY IN THE PRESENCE OF DIABETES *

E. STARR JUDD, M.D.
RUSSELL M. WILDER, M.D.
AND
S. FRANKLIN ADAMS, M.D.
ROCHESTER, MINN.

Two years ago,[1] we reported a low mortality rate following a series of operations on patients with diabetes. After two more years' experience in this type of work, we are now reporting the combined results of four years of effort to minimize the mortality rate in such cases. Between Oct. 1, 1921, and Oct. 1, 1925, 667 operations were performed on 497 patients; 363 of the operations were of a minor type, and 304 of a major type (tables 1 and 2). In the first group, two deaths occurred; in the second, eighteen. During the last three years in the Mayo Clinic, operations have been performed, regardless of the presence of diabetes, on the assumption that the diabetes itself, if properly controlled, would not increase the risk of operation. For three years, therefore, no patient has been refused necessary surgical procedures because of diabetes.

TABLE 1.—*Major Operations*

Thyroidectomy*	59	Excision of mass in axilla	1
Cholecystectomy*	40	Excision of sensory root of gasserian ganglion*	1
Appendectomy*	27	Posterior resection of anal canal	1
Removal of adnexa (female)	19	Fixation of uterus	1
Herniotomy (ventral and inguinal)*	16	Shortening of round ligaments	1
Major amputation*	15	Cholecystogastrostomy*	1
Cholecystostomy*	13	Knife excision of gastrojejunal ulcer	1
Prostatectomy†	13	Block dissection of glands of neck	1
Removal of cataract	13	Complete mastoidectomy	1
Colostomy‡	12	End-to-end anastomosis	1
Nephrectomy	9	Cautery excision of ulcer	1
Amputation of breast*	7	Excision of diverticulum of bladder	1
Posterior gastro-enterostomy	6	Knife excision of ulcer	1
Cystotomy	6	Ureterolithotomy	1
Exploration	6	Excision of fascia of both submaxillary regions	1
Choledochostomy	4	Thoracoplasty	1
Partial gastrectomy*	2	Drainage of pancreatic cyst	1
Mayo operation for prolapse	2	Removal of cyst of omentum	1
Partial resection of bladder	2	Radical dissection of both groins	1
Mikulicz operation	2	Resection of rectum	1
Drainage of perinephritic abscess*	2	Attempted extraction of lens of right eye	1
Excision of thyroglossal duct	1	Enucleation of right eye	1
Left cervical sympathectomy	1		
Drainage of appendical abscess	1		
Colocolostomy*	1		
Closure of colostomy	1		
Finney pyloroplasty*	1		
Cordotomy	1		

* One operative death.
† Two operative deaths.
‡ Three operative deaths.

In every case there was frank diabetes, but in the majority of cases it was mild. One hundred and eighty-one operations were performed in cases of moderately severe diabetes, and in eighty-two showing a severe form (table 3). According to one classification,[2] 119 cases were of the acute progressive type. In 158 cases the diabetes was associated with vascular lesions, in ninety-one with cholecystitis and pancreatitis, and in 199 with obesity. Fatalities occurred in about the same proportion in all these groups (tables 4 and 5). None of the deaths were directly attributable to diabetes. In only a few cases was there postoperative acidosis. In six cases carcinoma was the chief or contributing cause of death; pneumonia was the contributing cause in eight cases, and septicemia in three.

TABLE 2.—*Minor Operations*

Alveolotomy	131	Amputation of cervix	2
Tonsillectomy*	80	Alcohol injection of nerve	2
Dilation and curettage	11	Bovée's operation	2
Perineorrhaphy	8	Hemorrhoidectomy	2
Excision of		Transfusion	2
Superficial lipomas	7	Repair of umbilical hernia	2
Uterine polyp	5	Abdominal paracentesis	2
Epithelioma	4	Transplantation pterygium	2
Lymph nodes	3	Curettement of bone sinus	1
Cyst of cheek	2	Removal of granulation tissue	1
Lacrimal sac	2	Drainage of phlegmon of lower jaw	1
Nasal polyps	2	Manipulation of shoulder	1
Subdermal fibrosis	1	Removal of specimen from trachea	1
Carcinomatous implant	1	Repair of vesicovaginal fistula	1
Keratosis	1	Sic operation for hydrocele	1
Callous area	1	Cautery and excision of scarred area	1
Mucous fold	1	Skin graft	1
Calcaneal spurs	1	Repair of cystocele	1
Cyst of breast	1	Removal of detritus from aural canal	1
Hernia	1	Tracheorrhaphy	1
Parotid tumor	1	Cauterization of mucous cyst	1
Postanal dermoid	1	Exploration of humerus for osteomyelitis	1
Fibrolipoma of forehead	1	Trephine for glaucoma	1
Carbuncle	1	Cautery excision of papilloma of rectum	1
Segment of rib	1	Orchidectomy	1
Fistulous tract	1	Removal of great toe nail	1
Anterior lip of cervix	1	Removal of sequestrum of great toe	1
Drainage of		Removal of bunion	1
Abscess of leg	3	Removal of nerve of supra-orbital region	1
Abscess of chest (empyema)	2	Plastic operation on sphincter	1
Abscess of foot	1	Removal of fibroma of abdominal wall	1
Abscess of arm	1	Repair of Dupuytren's contraction	1
Abscess of perineum	1	Artificial pneumothorax	1
Abscess of chest wall	1		
Amputation of toes*	9		
Biopsy	6		
Circumcision	5		
Drainage of submaxillary sinus	4		
Aspiration of chest	4		
Fistulectomy	3		
Fissure in ano	3		
Ligation and stripping of varicose veins	2		

* One operative death.

TABLE 3.—*Cases According to Classification of Diabetes*

Diabetes	Major Operations	Minor Operations
Mild	207	197
Moderate	77	104
Severe	20	62
Total	304	363
Acute	15	104
Obese	89	110
Vascular	69	89
Doubtful	63	29
Interstitial	68	31
Total	304	363

The extremely low operative risk attending major operations on patients with diabetes reported for the two years 1922 and 1923 was not maintained during the next two years. This is probably largely a matter of chance, the averages for the four years representing more truly the surgical risk of such patients. The

* From the Divisions of Medicine and of Surgery, Mayo Clinic.

1. Adams, S. F., and Wilder, R. M.: Surgical Risk of Diabetic Patients, Surg. Clin. N. America **4**: 587-593 (April) 1924; The Present Status of the Diabetic Patient as a Surgical Risk, Wisconsin M. J. **22**: 557-561 (May) 1924.

2. Wilder, R. M.: Types of Diabetes Mellitus, M. Clin. N. America **5**: 455-467 (Sept.) 1921.

averages are considerably higher than those reported by the surgical staff of the clinic for operations in general, but low compared to the mortality rate of operations on patients with diabetes reported from other surgical clinics with wide experience. Undoubtedly, fewer cases of acute infections are seen in the Mayo Clinic than are seen in hospitals in larger cities. For example, in Bauman's[3] recent report, thirty-three patients required emergency surgical measures, while in our series there were only six. The surgical procedures in our series were, on the whole, as severe as those reported by other observers (table 1). It is significant also that the mortality rate was as high in the group of mild cases as in the severe.

Although modern methods of the treatment of diabetes eliminate the danger of acidosis and reduce considerably the susceptibility of the patient to infection, it is still possible that diabetes contributes to death in ways that we now have no means of measuring. As a rule, patients with diabetes who require operation are advanced in years. The youngest patient to die in our series was aged 51. The average age of all having major operations was 54 years. The average of those having minor operations was 47 years. Patients of this age with diabetes usually suffer from extensive degenerative lesions. Many of them have severe arteriosclerosis and many have coronary sclerosis and myocardial degeneration.[4] All of these factors add to the risk of operation, and it is unlikely that under the most favorable circumstances the surgical death rate in this group can ever be brought as low as that of any group of younger patients with fewer degenerative complications.

TABLE 4.—*Fatal Cases According to Classification of Diabetes*

Diabetes	Major Operations	Minor Operations
Mild	13	2
Moderate	4	..
Severe	1	..
Total	18	2
Acute	..	..
Vascular	4	1
Obese	9	1
Doubtful	2	..
Interstitial	3	..
Total	18	2

Major amputations for gangrene of the extremities were performed in fifteen cases and resulted fatally in one case. The healing of the amputated stumps was very satisfactory. In order to insure a good blood supply to the stump, the amputation was high, and the blood sugar was maintained at approximately normal levels by the frequent injection of insulin.

In cases of gangrene limited to the toes, of the dry and nonadvancing type, two courses are open. The safest is amputation of the foot, but often the foot can be saved and the toe alone sacrificed. This offers a reasonable chance of conserving use of the foot and securing fairly rapid healing. The second course is medical treatment alone, which includes rest, stimulation of circulation, and the maintenance of the blood sugar at a low level by frequent injections of insulin. Exclusive medical management necessitates a long period of careful nursing and may be unsuccessful in the end. The decision as to which of these procedures is desirable in a given case will be influenced by the extent of the gangrene, the degree of obstruction of the blood vessels supplying the foot, the severity of the diabetes, and the economic condition of the patient. In a number of recent cases, we have observed somewhat better results in the healing of chronic ulcers and gangrenous areas following the direct application of insulin to the wound.

Three of twelve patients who were operated on for carcinoma of the rectosigmoid or descending colon died. Death was attributed to poor healing of the bowel at the point of anastomosis, leakage, and resulting peritonitis. The surgical risk in this type of operation is high under the most favorable circumstances, and the complication of diabetes with its attending arteriosclerosis is unquestionably extremely grave. The blood supply to the descending colon and sigmoid is always poor and, in cases of extensive arteriosclerosis, it is probably so poor that healing of the bowel is delayed and leakage inevitable. We can, we believe, reduce the risk in these cases by using more freely the multiple-stage operation and also by employing more free drainage of the wound at the time the resection is made.

FACTORS REDUCING MORTALITY

Methods of Treatment.—Several years ago, the plan was adopted at the clinic of placing all patients with diabetes, both surgical and medical, under one service in the hospital, and this has probably contributed largely to the lowering of the mortality rate following surgical operations. Patients are treated both before and after operation. The cooperation of the surgeon in postoperative management is obtained in the medical ward. There is no opportunity for the interruption of the precise diet and accurate administration of insulin that should precede and follow operation, and difficulties arising from a division of responsibility that were encountered before this plan was adopted are eliminated.

Purely surgical problems are left to the surgical staff for decision. These include, for example, the selection of the anesthetic. Ether has been the choice in a number of such cases,[5] and the mortality rate has not been greater than that with other anesthetics. From a medical point of view, ether is not a desirable anesthetic in cases of diabetes, but, as Fitz[6] has pointed out, the amount of ether used in individual cases in the Mayo Clinic is relatively small, and in certain cases the advantages to be gained from satisfactory anesthesia outweigh the danger of the anesthetic, as, for example, when the patient's complete relaxation permits a more rapid operation and thus lessens the severity of shock. Ethylene has been employed in many such cases, but thus far our experience has not been sufficient to conclude that it is any less dangerous than ether. Local anesthesia is obviously the most desirable, other things being equal. An unnecessary prolongation of an operation is extremely detrimental and is to be avoided.

Preoperative Treatment.—As Foster[7] has said, every patient with diabetes who is operated on should be regarded as a candidate for coma, and its prevention is better than the cure. Our practice is to prescribe a

3. Bauman, Louis: Diabetes in Surgical Patients with Especial Reference to Insulin, Surg., Gynec. & Obst. **41**: 272-283 (Sept.) 1925.
4. Wilder, R. M.: Necropsy Findings in Diabetes, South. M. J., to be published.
5. Berkman, D. M.: The Diabetic Patient as a Surgical Risk, Collected Papers of the Mayo Clinic, Philadelphia, W. B. Saunders Company **13**: 1177-1181, 1921.
6. Fitz, Reginald: Surgical Anesthesia in Relation to Diabetes Mellitus, Am. J. Surg. (anesthesia supp.) **36**: 46-48 (April) 1922.
7. Foster, N. B.: Surgical Aspects of Diabetes, J. A. M. A. **84**: 572-576 (Feb. 21) 1925.

TABLE 5.—*Details of Fatal Cases*

Case	Age	Sex*	Type of Diabetes	Anesthetic	Postoperative Days	Operation	Clinical Cause of Death	Necropsy Findings
1	51	♂	Moderate interstitial	Ether	4	Partial gastrectomy, appendectomy	Postoperative gastric obstruction and probable peritonitis	Refused
2	74	♂	Mild vascular	Ethylene and ether	19	Disarticulation of right great toe	Coronary sclerosis (?); pulmonary embolism (?); diabetic gangrene	Refused
3	57	♂	Mild interstitial	Ethylene	4	Cholecystogastrostomy	Bronchopneumonia; cancer of head of pancreas	Refused
4	54	♀	Mild obese	Cocaine	5	Tonsillectomy	Septicemia	Diabetes mellitus (clinical) with atrophy of pancreas (60 Gm.); acute mitral endocarditis and terminal edema of brain
5	59	♂	Mild vascular	Ether and local	7	Suprapubic cystotomy; prostatectomy	Hypertrophy of prostate; myocardial degeneration; hypostatic edema of lungs; acute bronchitis; diabetes	Chronic cysto-ureteropyelonephritis with acute exacerbation of phlegmons left cheek, neck and mediastinum, beginning gangrene; bronchopneumonia; acute pseudomembranous gastritis
6	55	♀	Mild vascular	Ethylene	11	Amputation through lower third of thigh	Staphylococcus septicemia; diabetic gangrene	Refused
7	71	♂	Moderate vascular	Ethylene and local	13	Drainage of perinephritic abscess, phlegmon of lower jaw and abscess of chest wall	Pyelocystitis; bacteremia	Refused
8	62	♀	Mild obese	Local, ethylene and ether	34	Exploratory puncture below right scapula; radical amputation of left breast	Pneumonia; empyema; cancer of breast; metastasis	Amputation of left breast for cancer with pneumonia and empyema (healed), metastasis to lungs, pleura, mediastinal lymph nodes, parietal pericardium and omentum; infarct left lung; calcium left ureter with obstruction and dilatation of ureter; hydronephrosis, 3+; diabetes (clinical)
9	65	♂	Mild obese	Local	9	Colocolostomy	Pulmonary embolism; cancer of colon; diabetes	Recent colocolostomy for cancer of splenic flexure; jejunocolic fistula with pulmonary embolism (source?), diabetes (clinical), local peritonitis with moderate ileus, 2; cholecystitis with cholelithiasis
10	67	♀	Mild doubtful	Ethylene, ether and local	5	Finney pyloroplasty	Cancer of pancreas, pancreatitis and renal insufficiency	Cancer of pancreas with atrophy and metastasis to regional lymph nodes; recent excision and gastroduodenostomy for duodenitis with hemorrhage into stomach, duodenum, jejunum and local peritonitis; fatty changes in heart, liver and kidneys
11	57	♂	Mild obese	Ether and local	5	Anterior resection of rectosigmoid; temporary colostomy	Postoperative gangrene of wound	Postoperative gangrene of wound; formation of abscesses; arteriosclerosis
12	67	♂	Moderate doubtful	Ether	6	Cutting and avulsion of posterior root, gasserian ganglion	Bronchopneumonia	Section of posterior root of gasserian ganglion for trifacial neuralgia, with purulent bronchitis and bronchopneumonia; diabetes (clinical); cardiac hypertrophy, advanced coronary sclerosis
13	73	♂	Mild obese	Local regional	2	Prostatectomy; transfusion	Hypertrophy of prostate; myocardial degeneration	Suprapubic prostatectomy for hypertrophy and chronic infection of prostate with myocardial degeneration and cystitis; diabetes (clinical) with mild fibrosis of pancreas and fatty replacement; edema and congestion of lungs
14	69	♂	Mild obese	Ether	27	Herniotomy; removal of bilateral calcaneal spurs	Bronchopneumonia; staphylococcus septicemia	Refused
15	60	♂	Mild obese	Ethylene and ether	66	Temporary colostomy	Cancer of descending colon; pneumonia	Colostomy for cancer of descending colon with perforation; abscesses of left flank; metastasis to lymph nodes and liver; pneumonia with abscess formation; obesity; diabetes (clinical)
16	55	♂	Interstitial severe	Ether	6	Cholecystectomy	Lobar pneumonia	Obstruction of pancreatic duct by multiple calculi; destruction of pancreatic tissue; bilateral lobar pneumonia both lower lobes, fibrinopurulent pleuritis (1,500 cc. left, 750 cc. right); membranous enteritis of terminal ileum (30 cm.)
17	59	♀	Mild obese	Ether	4	Appendectomy	Acute gangrenous appendicitis	Appendectomy and drainage for acute gangrenous appendicitis with generalized peritonitis; atrophy of pancreas, with diabetes (clinical); multiple diverticula of colon; cloudy swelling of kidney and liver
18	65	♂	Mild vascular	Nitrous oxide and oxygen, ether, and procaine	8	Partial thyroidectomy; suprapubic cystotomy for partial prostatectomy	Partial prostatectomy with pneumonia	Recent partial prostatectomy for cancer of prostate with cystitis and pyelonephritis and bronchopneumonia; partially healed wound following thyroidectomy with old abscess in left operative field; atrophy of pancreas; arteriosclerotic atrophy of kidneys
19	65	♂	Mild obese	Field block	8	Permanent colostomy	Cancer of colon; colostomy with peritonitis	Colostomy for cancer of rectum with generalized peritonitis and terminal bronchopneumonia; metastasis to liver and mesenteric lymph nodes; thrombosis of portal vein
20	57	♂	Mild obese	Local	3	Removal of gland from right flank; transfusion; cholecystostomy	Cancer of pancreas; cholemia	Cancer of head of pancreas involving the ampulla of Vater; obstruction to common bile duct; general icterus; extensive pancreatitis; recent cholecystostomy

* In this column, ♂ indicates male; ♀, female.

diet containing 140 Gm. of carbohydrate, for a period of four days before operation, unless a surgical emergency necessitates less delay. This diet is richer in carbohydrate than that ordinarily given to patients with diabetes, but is probably desirable in surgical cases in order to build up a reserve of glycogen and thus offset postoperative acidosis. Insulin is used in the amounts necessary to control any glycosuria that may arise.

Postoperative Treatment.—When the patient returns from the operating room, he receives insulin and glucose. The latter is started by proctoclysis and later, when postanesthetic nausea has disappeared, is continued in the form of fruit juices and ginger ale by mouth. Enough insulin is given in repeated doses so that at least 75 Gm. of glucose is metabolized every twenty-four hours. All urine is tested for the presence of sugar and diacetic acid. The plasma carbon dioxide capacity is estimated whenever there is any clinical evidence of acidosis, and the slightest acidosis is combated vigorously.

CONCLUSIONS

1. Suitable preoperative and postoperative management, the proper selection and judicious administration of anesthetics, and surgical technic that avoids unnecessary trauma and delay, contribute greatly to reducing the risk of operation on patients with diabetes.

2. Patients with diabetes who undergo operations are very susceptible to acidosis, but the danger of such acidosis can be practically eliminated by proper treatment. Insulin is of great value in preventing acidosis, but does not replace other measures the value of which was proved before insulin was available.

3. The healing of operative wounds proceeds without any greater delay than usual, provided diabetes is rigidly controlled. The healing of chronic ulcers or indolent wounds may possibly be stimulated by the direct application of insulin to the wound. Most patients with diabetes, particularly those requiring surgical procedures, are advanced in years, are overweight, and are suffering from advanced arteriosclerosis and other degenerative lesions which independently make the surgical risk serious.

4. In view of these considerations, it seems to us that such patients should be referred for operation to one of the larger medical centers, where surgeons may cooperate with physicians who are experienced in the treatment of diabetes.

Psychologic Versus Traditional Aims.—Modern theory is opposed to the customary aims of physical training as given by many physical training directors so far as they are dominated by faculty psychology and an extreme confidence in formal discipline. General "obedience" (to commands), general power of "determination," of "order," of "exactness and precision," of "self-control," of "endurance," etc., cannot be developed to any great extent by gymnastics or any other phases of school activities. One may gain great powers of self-control, precision and determination in certain phases of school work without showing or possessing such agilities when outside the school environment in which they were developed. This again lessens the emphasis on formal physical training and strengthens the emphasis on purposive psychologic play and work. The progressive physical educator today is in favor of combining and unifying physical and mental education as one purposive system of activities having their own end, and he sees the tendency very strong in this direction in up-to-date schools. He is in favor of using as many instinctive play activities as possible, but he realizes that our highly artificial systems of schooling, with their present buildings, grounds, equipment and courses, will long resist the transforming tendencies.—Williams: Physical Education, pp. 5-6.

OCCURRENCE OF THROAT INFECTIONS WITH STREPTOCOCCUS SCARLATINAE WITHOUT A RASH *

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During the winter of 1924 and 1925, an epidemic of hemolytic streptococcus infection occurred in the Presbyterian Hospital. The infections were prevalent among the nursing staff as well as among the patients admitted to the wards, and consisted chiefly of scarlatina, acute throat infections and infections of wounds. This epidemic has afforded the opportunity to study two phases of streptococcus infections: first, the infection of wounds by individuals who chronically carry hemolytic streptococci in the nose and throat, and, second, the etiology of cases of acute tonsillitis and pharyngitis occurring among contacts with scarlatinal patients. We will confine this report to the study of the streptococci obtained from the throats of the nurses with scarlet fever and acute streptococus throat infections, since the material relevant to wound infection is to be published elsewhere.[1]

All the cases reported occurred among the nursing staff, which was housed in one building. The epidemic began with several cases of scarlet fever in December. Following the scarlatina were numerous cases of streptococcus angina. These cases were especially prevalent in January and February, but sporadic cases of scarlet fever and simple throat infection occurred until May. After the first few cases of scarlet fever were observed, practically the entire nursing staff of the hospital was tested for susceptibility to scarlet fever by the intracutaneous injection of toxin. The majority of the scarlatinal infections were early in the epidemic, so that we were unable to collect data concerning the relative susceptibility of persons with positive and negative reactions, but opportunity was afforded to determine several points relative to infections with *Streptococcus scarlatinae*. The questions to be answered were: 1. Can an anginal infection with *Streptococcus scarlatinae* occur without a rash? 2. If such infection does occur, does it occur in susceptible persons as indicated by the intracutaneous toxin test for immunity? 3. Do agglutination and toxin production correspond as a test of specificity for the identification of strains of hemolytic streptococcus during an epidemic of scarlet fever? 4. Are strains of hemolytic streptococci from cases of acute pharyngitis as closely related as the groups from scarlet fever and erysipelas? To settle the points in question, cultures of the throats were taken and the agglutination reactions and toxin production of the hemolytic streptococci obtained were studied.

METHODS OF STUDY

Cultures were made on blood agar, and a colony of hemolytic streptococcus was transferred to broth containing sterile strips of potato. If strains were diffuse in this medium, they were transferred to blood broth for storage, while the granular strains were transferred several times in this medium until they became diffuse. Two strains were selected from among the scarlatinal group (S III, S VIII) and two strains from

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1. Meleney, F. L., and Stevens, F. A.: Postoperative Hemolytic Streptococcus Wound Infections and Their Relation to Hemolytic Streptococcus Carriers Among the Operating Personnel, Surg., Gynec. & Obst., to be published.

the cases of pharyngitis for the preparation of immune agglutinating serums. The pharyngitis strains (T I, T IV) chosen did not produce scarlatinal toxin. Rabbits were immunized according to previously outlined methods, and each of the twenty-three strains from both the scarlatinal and the pharyngitis groups was tested for agglutination with each of the four serums obtained (serums S III, S VIII, T I and T IV). The technic of agglutination was that of Dochez, Avery and Lancefield.[2] Certain modifications, however, have been employed to facilitate the procedure; i. e., the streptococci for agglutination were grown in phosphate broth with sterile potato strips, centrifugalized, washed once in distilled water and resuspended in phosphate broth.[3] These modifications overcome numerous difficulties. Since certain strains of hemolytic streptococci occasionally become physically incapable of agglutination yet retain their antigenic specificity, the strains were tested for their ability to absorb heterologous agglutinin from serums S III and S VIII. We have found that such strains are capable of absorbing agglutinin for scarlatinal strains from scarlatinal serums, thus establishing antigenic similarities.[3] The dosage of the toxin[4] for skin testing had previously been determined. Control injections were made with toxin heated at 100 C. for two hours. The toxin production of the various strains was tested with filtrates of 2 per cent horse serum broth cultures in persons showing positive skin reactions with known scarlatinal toxin. These filtrates were studied with regard to the presence of heat labile toxin and for neutralization with scarlatinal antitoxic serum.

Skin Reactions of Patients and Toxin Production and Agglutination Reactions of Strains of Hemolytic Streptococci from Throat Cultures

	Skin Reactions in Individuals in Cm.		Toxins		Agglutination and Absorption with Strains Serum S III, S VIII, T I and T IV					
Strain	Control	Reaction	Heat Labile	Neutralized with Scarlet Serum	Agglutinates Serum S III	Absorbs Serum S III	Agglutinates Serum S VIII	Absorbs Serum S VIII	Agglutinates Serum T I	Agglutinates Serum T IV
S I	..	..	+	+	+	+	+	+	—	—
S II	..	..	+	+	+	+	+	+	—	—
S III	..	..	+	+	+	+	+	+	+	—
S IV	..	..	+	+	—	+	—	+	—	—
S VI	..	..	+	+	+	+	+	+	—	—
S XXII	..	..	+	+	+	+	+	+	±	—
T I	—	4	—	..	—	—	—	—	+	—
T II	..	..	+	+	+	+	+	+	—	—
T III	—	—	+	+	+	+	+	+	—	—
T IV	—	—	—	..	—	—	—	—	—	+
T VI	—	4	—	..	±	—	—	—	+	—
T VII	3	6	—	..	—	—	—	—	+	—
T VIII	—	—	+	+	+	+	+	..	±	±
T IX	..	..	+	—	—	—	—	—	—	—
T X	—	2	—	..	±	—	—	..	—	±
T XI	—	—	+	+	+	+	..	..	±	±
T XV	4	5	—	..	—	—	—	..	—	—
T XVI	4	4	—	..	—	—	—	..	+	—
T XVII	2	2	+	+	+	+	+	+	—	—
T XVIII	1	6	—	..	—	—	—	—	—	±
T XIX	..	.	—	..	—	—	—	..	—	±
T XX	1	3	—	..	+	+	+	+	—	—
T XXII	4	4	—	..	—	—	—	—	—	—

The data obtained in this study have been summarized in the accompanying table. The strains of streptococci have been arranged in the first column, with the source of each strain indicated by a letter, S (scarlatina) or T (acute pharyngitis). The second and third columns give the size of the skin reactions in centimeters with boiled and unboiled scarlatina toxin in the person from whom each strain was obtained. The fourth and fifth columns, respectively, show the presence of heat labile toxin and of toxin capable of neutralization with scarlatina antitoxic serums in the filtrates from cultures of the scarlatina and pharyngitis strains. The agglutination of the various strains with the serums scarlet I, scarlet VIII, throat I and throat IV is indicated by plus signs in the remaining columns. Under S I and S VIII, the column headed "absorption" shows whether the strains were capable (+) or incapable (—) of absorbing agglutinin from these serums for other scarlatinal strains.

2. Dochez, A. R.; Avery, O. T., and Lancefield, R. C.: Antigenic Relationships Between Strains of Streptococcus Hemolyticus, J. Exper. Med. **30**: 179 (Sept.) 1919.

3. Stevens, F. A., and Dochez, A. R.: The Relationship Between Strains of Hemolytic Streptococci from Erysipelas and Scarlet Fever, J. Exper. Med., to be published.

4. The toxin employed in the susceptibility tests was obtained through the courtesy of Dr. Williams of the Board of Health of New York City.

COMMENT

The occurrence of scarlatina without rash has been suspected clinically for many years. Certain authors have noted the occurrence of severe angina without cutaneous manifestations among contacts with scarlatina.[5] Frequently these cases have been followed by severe nephritis.[6] Other instances have been noted in which scarlatina followed exposure to severe angina.[7] Aside from the rash, which varies greatly in intensity in scarlet fever, from the slightest punctate blush on the trunk and flexor surfaces in mild cases to the most vivid hue of red in the more toxic cases, it appears that we have no clinical criterion by which a severe streptococcus angina may be distinguished from scarlatina. Considering the variability of the rash in recognized cases of scarlet fever, there has been sufficient justification for believing that scarlatinal angina might occur without the usual cutaneous reaction.

Streptococcus scarlatinae is apparently a widely distributed organism. Williams[8] reports the presence of scarlatinal toxin producing strains in osteomyelitis, endocarditis, and in chronically inflamed tonsils in which there were none of the usual manifestations of scarlet fever. Since such strains have been isolated under these conditions, it is not surprising that five of the strains of streptococci obtained in cultures from the cases of acute pharyngitis occurring in this epidemic of scarlatina and angina showed both the agglutinative and the toxin producing properties of *Streptococcus scarlatinae*. This observation confirms the preceding clinical conception that scarlatinal angina may occur without a rash. How frequent these infections are cannot be ascertained from this series of cases, since all of the persons from whom cultures were obtained were scarlatinal contacts. Rosenow[9] has found strains of scarlatinal streptococci in acute follicular tonsillitis, but his series is too small to give an idea of the general incidence among non-scarlatinal contacts.

Perhaps the most important observation is that these cases of scarlatinal angina without rash have occurred among the personnel with negative Dick reactions. This leads us to believe that we must be careful in attempting to draw a strict analogy between scarlet fever and diphtheria. In diphtheria, in which the infecting organism is essentially a toxin producer and has little proclivity toward pyogenic manifestations, the Schick test is apparently an accurate index to the susceptibility of individuals to infection. We know that large amounts of scarlatinal antitoxin will prevent infection with *Streptococcus scarlatinae*, since both scarlatina and angina without a rash are rare among contacts immunized with antiscarlatinal serum. Among seventy-six contacts whom we have immunized with serum,

5. Mayr, V., in Hebra's Diseases of the Skin, London, 1866. Thomas and von Ziemssen: Handbuch der speziellen Pathologie, Leipzig **2**: 269, 1874; Cyclopaedia of the Practice of Medicine, New York **2**: 251, 1875.

6. Trousseau and Graves, quoted by Welch and Schamberg in Acute Contagious Diseases, Philadelphia, 1905. Leichtenstern, O.: Ueber die 1880 and 1881 in Köln herrschende Scharlach Epidemic, Deutsche med. Wchnschr. **8**: 173, 1882.

7. Morris: Pathology and Therapeutics of Scarlet Fever, Philadelphia, 1858, p. 35. Graves, quoted by Welch and Schamberg (footnote 6).

8. Williams, Anna W.: The Relationship Between Different Antibodies, Am. J. Pub. Health **15**: 129 (Feb.) 1925.

9. Rosenow, E. C.: Precipitin Reaction in the Diagnosis of Scarlet Fever and Allied Hemolytic Streptococcus Infections, J. A. M. A. **86**: 9 (Jan. 2) 1926.

scarlet fever occurred only once. When complications are established in scarlet fever with the scarlatinal streptococcus, this serum has no therapeutic effect. Apparently the streptococcus has both bacterial and toxic properties fully developed, and the Dick test, while indicating antitoxic immunity, is not an index of the amount of antitoxin necessary in the blood to prevent bacterial invasion. Rosenow, as well, has recently advanced the idea that the skin reaction is an index of antitoxic immunity and not of the immunity of the throat to streptococcus infection. Among a number of Dick negative individuals, a certain percentage will probably be immune to both the toxin and the bacteria.

It is interesting to observe that toxin production and agglutination with scarlatinal immune serums are closely parallel. The agglutination of the strains from the cases of nonscarlatinal pharyngitis indicate that there is no relation between strains of hemolytic streptococci causing acute throat infections.

CONCLUSIONS

1. Scarlatinal infection of the throat may occur without a rash.
2. This type of infection may occur in individuals showing negative skin reactions to scarlatinal toxin.
3. The Dick test is not a reliable index of immunity to such throat infections with *Streptococcus scarlatinae*.
4. In the series of cases observed, agglutination reactions with scarlatinal serum and toxin production are closely parallel.
5. There is no antigenic relationship between strains of hemolytic streptococci from acute streptococcus pharyngitis.

THE PATHOLOGIC PHYSIOLOGY OF EXPERIMENTAL GANGRENOUS PANCREATITIS *

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In this paper I present a brief preliminary report of a group of experiments, the object of which was, if possible, to obtain more information concerning the causes and the nature of the violent toxemia occurring in acute hemorrhagic pancreatitis. Ultimately, it was hoped, a more rational and effective treatment of the disease might be evolved than is now generally employed.

No attempt will be made here to discuss the literature on acute pancreatitis, or to describe the clinical manifestations of the disease. For this information the reader is referred to the recent very inclusive paper by Moynihan.[1] Suffice it to say that almost every conceivable method by which the pancreas could be seriously injured has been utilized to reproduce in animals the clinical picture of acute pancreatitis; all that is necessary is that a sufficient amount of pancreatic tissue be suddenly so devitalized that an extensive necrosis and autodigestion of the gland will occur.

The most hotly contested questions between experimenters on this disease pertain at present to the rôle played by bacteria in its etiology and symptomatology. Deaver, Arnsperger and Maugeret are the principal proponents of the theory that the prime factor in the causation of the disease is an infection reaching the pancreas by way of lymphatics from neighboring organs. Others consider that the entrance from the duodenum of bacteria (which are presumed to be normally absent) into the pancreatic ducts under certain conditions may activate intraductally the pancreatic enzymes, which will then produce a severe pancreatic lesion. Those who adhere only to the bile theory of the etiology of acute pancreatitis manage to disagree as to the importance of infected versus noninfected bile. It is far from a settled matter whether the toxemia of acute pancreatitis is dependent on the absorption of protein split products from the necrosing gland into the general circulation and whether bacteria play any rôle in the formation of these substances, or on the diffusion of ferments into the peritoneal cavity with the absorption of poisonous products of their action on the peritoneal tissues, or on the absorption into the general circulation of these ferments. No one has, as far as I know, considered the possibility of a toxemia occurring as a result of a severe local injury by these protein split products, acting presumably on the intestinal musculature and probably also on that of the vascular system. The experiments cited here strongly indicate that such may be the mechanism by which the toxemia is produced. These experiments were commenced with the idea of producing, if possible, a strictly aseptic, typical pancreatitis, and if this was not possible, of studying the rôle of the organisms that were found.

METHODS

Dogs were used throughout most of the work; all experiments were done with complete morphine-ether anesthesia. An absolutely typical picture of acute hemorrhagic pancreatitis was produced by the simple process of tying off all the blood supply to a sufficient amount of the gland. A similar method was used by Blume [2] in 1897 and by Katz and Winkler [3] in 1898. The anatomy of the dog's pancreas is such that the head and tail are thus very easily rendered gangrenous, the body with difficulty so. The head, tail and body of the gland each represent approximately one third of its total weight. When it was desired to injure the body of the pancreas in addition to the head and tail, several methods were used; namely, injection of bile through the pancreatic duct, crushing the body with forceps, or tying multiple ligatures through its substance. In the bacteriologic work, more than ordinary precautions were taken to insure operations and necropsies as aseptic as possible. Necropsy cultures were taken immediately after death, or, preferably, the animals were killed when moribund if death seemed imminent. All cultures were taken on enriched mediums. In one group of animals an attempt was made to produce the usual toxemia of acute pancreatitis by the removal of aliquot portions of the pancreas and replacing them in the abdomen, carefully wrapped in the omentum. That this failed is highly significant.

RESULTS

The extreme variation in the symptoms and pathologic conditions developing from the same identical procedure in different animals is very striking. By the methods described, all the different pathologic conditions characteristic of acute pancreatic affections in the human being have been reproduced, from complete gangrene to the formation of large, single pseudocysts. The one notable difference was the absence of fat

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* From the Albert Kuppenheimer Fund of the Michael Reese Hospital, the Nelson Morris Memorial Institute for Medical Research, and the Hull Physiological Laboratory of the University of Chicago.

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3. Katz, A., and Winkler, F.: Arch. f. Verdauungskr. **4**: 289-367, 1898.

necroses in about two thirds of the animals. I have no explanation for this. They are, however, occasionally reported absent by clinicians.

The mortality statistics which follow are of considerable interest:

One third of the gland (head or tail) destroyed (i. e., all blood vessels tied off and the portion thus isolated left in situ): Four out of eleven animals (36 per cent) died in from twenty-four to seventy-two hours of a typical acute hemorrhagic pancreatitis.

Two thirds of the gland destroyed (head and tail): Fourteen out of twenty-five animals (56 per cent) died in from eighteen to 120 hours of a typical pancreatitis.

More than two thirds of the gland destroyed: Of six animals, all died in forty-eight hours or less.

One third of the gland removed and wrapped in the omentum: Six animals, no deaths.

Two thirds of the gland removed and wrapped in the omentum: Three animals, no deaths.

Entire gland from another animal wrapped in omentum: One animal, survived.

The symptoms indicative of the amount of toxemia varied also in much the same way. Unmistakable signs of a severe toxemia were present in 80 per cent of the animals with one third of the gland destroyed, and in all of those with two thirds or more destroyed. Of those animals with one third removed to the omentum, none showed more than the slightest evidence of malaise; all those with two thirds or more removed showed a moderate degree of general indisposition.

The number of animals presenting extensive walling-off adhesions of the omentum and the neighboring structures to the pancreas at necropsy was somewhat higher for those that recovered. This may be either the cause of or the effect of the recovery or both.

All attempts to produce a sterile pancreatitis failed. Organisms were always found in one or more of the cultures taken from the peritoneal exudate, the gangrenous gland, localized abscesses, etc. Twenty-three sterile necropsies were performed; in only two of these were all cultures negative. These were from animals in which part of the pancreas had been removed to the omentum, where it had become firmly encysted, and there was no toxemia or any of the pathologic findings of acute pancreatitis. Although organisms were always found, the impression received from the experiments was that the presence of bacteria in the acutely inflamed tissues was merely incidental, in that the reaction involved was one due to a violent toxemia which so reduced the vitality of the tissues that the nonpathogenic bacteria were able to gain a temporary foothold, which they lost rapidly as the toxemia disappeared. The fact that such organisms could be demonstrated in the peritoneal exudate of an animal well on the road to recovery, with no evidence whatever of peritonitis (i. e., the ordinary infectious type), indicates their probable relative unimportance in the picture, unless it be, as we now have no method of determining, that their mere presence in the tissues and exudate adds to the toxemia through products of their growth. This consideration puts the problem in the same class with that very difficult one of the rôle of bacteria in the toxemia from acute intestinal obstruction.

Sixteen bacteriologic analyses of fresh pancreas tissue removed sterilely at operation showed the presence of bacteria in all except one. It would appear from this that bacteria are normally present in the pancreas, presumably in the ducts.

In general, those organisms found in the fresh pancreas and in the tissues and exudate at necropsy were of a nonpathogenic variety, and were those organisms common to the upper gastro-intestinal tract. Various staphylococci, occasionally nonhemolytic streptococci, *B. subtilis*, *B. coli*, diphtherioid bacilli, sarcinae, yeasts and molds were the most frequent ones found.

COMMENT

Observation of the facts that the entire clinical and pathologic picture and the mortality rates are so very different when a given amount of pancreas tissue is allowed to autolyze completely wrapped up in the omentum from those obtained when it is left in situ; that the clinical picture of a typical case of acute pancreatitis so closely resembles that of an acute upper intestinal obstruction that it is often impossible to differentiate them; that there is a greater tendency on the part of the animals to recover when the omentum and other adjacent structures become adherent to and wall off the necrosing pancreas, and the distinct indications that the bacteria present in the inflamed tissues and exudates of the abdominal cavity are the result of and not the cause of this inflamed condition, leads to the suggestion that the symptoms of acute pancreatitis may be dependent on the liberation of some toxic product from the necrosing pancreas tissue, which, acting locally on the gastro-intestinal tract, and principally the upper gastro-intestinal tract, so interferes with its normal function as to produce a generalized toxemia of gastro-intestinal origin, probably of the nature of that associated with a paralytic ileus. The possibility that the omentum has some detoxifying power must also be considered as an explanation of the findings here reported, but this seems a less likely explanation. I shall not attempt here to give any actual figures as to the number of cases gleaned from the literature in which complications have been noted in man or in animals, occurring with acute pancreatitis, in which a disturbance in gastro-intestinal motility is indicated. Obstipation is a not infrequent symptom. In my own series of animals, three have died of intussusception in the jejunum, and one of acute dilatation of the stomach. Since the method I have used to produce pancreatitis involves a minimum of trauma, these complications could probably not be explained on that basis. The finding at necropsy of more or less dilatation of part or all of the gastro-intestinal tract, especially the duodenum, but sometimes only of those loops of bowel near the pancreas, is almost the rule, and not infrequently I have noted a loss of the normal elasticity of the intestinal walls so that they stretch like dead rubber. The mere intensity of the peritoneal reaction in acute pancreatitis would indicate a local irritation that has certainly been overlooked far too much in the past. Might not the extreme splanchnic congestion, the very low blood pressure, and the hemorrhagic exudate be the result of a local paralysis of the vascular musculature?

If this premise concerning the origin of the toxemia in acute pancreatitis approaches the truth, it opens up those new lines of therapy which are proving effective in the treatment of acute intestinal obstruction, as possibilities to control the toxemia of acute pancreatitis. Modifications of the methods advocated by Haden and Orr, the Portises and others may prove more effective than the present one of putting a drain in the pancreas. Experiments designed to test out these therapeutic methods in experimental acute pancreatitis are being conducted at present and will be reported in a later paper, as will also a group of experiments in progress on the blood chemistry changes in acute pancreatitis.

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LIVER FUNCTION TESTS

A COMPARATIVE STUDY OF FIVE METHODS IN ONE HUNDRED CLINICAL CASES *

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On our service at Mount Sinai Hospital during the last three years we have performed liver functional tests as a routine. The present report gives the results of 100 cases in which five tests were performed simultaneously, or within an elapsed time of forty-eight hours, which were done in the last year. The tests performed were the van den Bergh test,[1] the Widal [2] test (hemoclastic crisis), Rosenthal's [3] test, examination of the urine for urobilin and urobilinogen, and examination for bile salts in the urine.

THE VAN DEN BERGH TEST

Both the qualitative, which is divided into the immediate direct, biphasic direct, the delayed direct and the indirect, and the quantitative tests were employed. The quantity of bilirubin was expressed in units, the unit being a concentration of 1 in 200,000. We regarded 0.5 unit as the upper limit of normal.

TABLE 1.—*Results Obtained in a Negative and a Positive Widal Test*

		Check on Same Patient
A Positive Widal		
Before giving milk	14,400	10,800
30 minutes after	12,400	11,000
60 minutes after	13,400	10,400
90 minutes after	11,800	11,600
120 minutes after	12,600	10,800
A Negative Widal		**Check on Same Patient**
Before giving milk	7,800	7,800
30 minutes after	10,200	7,800
60 minutes after	9,000	7,600
90 minutes after	9,600	7,800
120 minutes after	9,400	7,600
150 minutes after	11,000	77,800

THE WIDAL TEST

We modified the original Widal technic by determining the changes in white cell count at thirty minute, instead of fifteen minute, intervals, following the ingestion of 200 cc. of milk given in the morning on an empty stomach or, in a few cases, after a fast of five hours. We have regarded a fall in the count of 1,000 cells within a three hour period as positive, and have designated it as one plus, adding another plus for each additional drop of 500 cells. The leukocyte counts were all done by the same person. Checks were made of the margin of error, using different pipets and making several counts on the same person at thirty minute intervals without having administered the milk. The average variation was 200 cells. The largest was 800 cells. Tests were also run on twenty-five normal persons—nurses and laboratory technicians—to check the method. All were negative. An example of the check used is given in table 1, showing the results obtained in the case of a negative and a positive Widal.

ROSENTHAL'S TEST

We have followed the modification of Rosenthal's original methods, which were described by Bogen,[4] and by Bloom and Rosenau,[5] and have taken the reading one hour after injection of the dye. Retention after one hour has been considered positive.

EXAMINATION OF URINE FOR UROBILIN AND UROBILINOGEN

For urobilinogen, Ehrlich's reagent [6] was used, and the determinations were made on freshly voided warm specimens. For urobilin, Schlesinger's [6] method was followed. We have found that this test is more easily read after standing for twenty-four hours.

BILE SALTS IN THE URINE

The Hay test [6] for the determination of bile salts in the urine has been used by us with especial attention to the following details: It should be performed on the morning urine, as this is the most concentrated sample in the twenty-four hours. It is important to use a clean beaker, filtered, freshly voided urine, and dry, finely powdered sublimed sulphur. The beaker should be on a level with the eyes, and good light is necessary. The test is based on the diminution of the surface tension of the urine in the presence of bile salts. If the test is positive, the sulphur particles will begin to fall to the bottom of the beaker immediately. The rapidity with which the sulphur particles are falling to the bottom of the beaker may be taken as a rough index of the amount of bile salts present. Studies of the bile salts content of the blood were made by Pettinkofer's method,[6] but its significance will not be discussed here.

The cases have been divided into four classifications: group 1, cases of liver disease with jaundice, nineteen observations; group 2, cases of liver disease without manifest jaundice, six; group 3, cases with clinical conditions in which liver disease was suspected but not clinically demonstrable; group 4, cases with clinical conditions in which liver disease was unsuspected, thirty-eight.

GROUP 1.—*Cases of liver disease with jaundice, nineteen observations.* This group consists of fourteen patients with the following diagnoses: There were seven cases of toxic jaundice, five of which were catarrhal, one followed arsphenamine therapy, and one which occurred during pneumonia; four cases of obstructive jaundice due to growth in the pancreas or ducts (operation); two cases of cholelithiasis (in which operation was performed); one with stone in the common duct with incomplete obstruction, and one case of primary carcinoma of the liver (necropsy).

GROUP 2.—*Cases of liver diseases without manifest jaundice, six observations.* Here there are six cases with the following clinical diagnoses; one case of pernicious anemia; one of Banti's disease; one of splenomegalic type of cirrhosis (in which operation was performed); one of secondary carcinoma of the liver; one of cardiac failure with enlarged liver and questionable jaundice, and one of enlarged liver and cholecystitis.

GROUP 3.—*Cases with clinical conditions in which liver disease was suspected but not clinically demonstrable.* In this class we have included cholecystitis, in which there is a direct inflammatory reaction in the liver; and the acute infectious fevers and toxemias in which in all the organs, including the liver, there is cloudy swelling and parenchymatous degeneration.

* From the medical service of Mount Sinai Hospital.

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GROUP 4.—*Cases with clinical conditions in which liver disease was unsuspected, thirty-eight observations.* In this group we have included those chronic conditions commonly seen in medical wards.

Table 2 shows the result of these tests in cases of toxic jaundice. As these are all cases with jaundice it is, of course, obvious that the quantitative van den Bergh test should be positive in all, since this test is merely a measure of the circulating bilirubin. The Widal test is also positive in all cases. This also is not surprising when one remembers that in toxic jaundice there is marked injury to the polygonal liver cells, and it is these cells that are supposed to perform the protein function of the liver. The dye test was positive in all except one case which was seen during convalescence. In one other case, namely, case 2, the dye test, which had previously been positive, became negative, while the Widal and van den Bergh tests were still positive. Urobilin or urobilinogen appeared in the urine in all cases except during the obstructive phase of catarrhal jaundice. It was at this period chiefly that bile salts also appeared.

TABLE 2.—*Results of Tests in Cases of Liver Disease with Toxic Jaundice (Nine Observations)*

Case	Diagnosis	Van den Bergh	Widal	Dye	Urobilin	Bile Salts in Urine
2	Catarrhal jaundice	10.0	..	3.5%	—	..
		2.5	..	16.0%	..	..
		9.71	..	—	—	—
3	Pneumonia with toxic jaundice	....	..	.....	..	..
4	Catarrhal jaundice	10.0	..	10.0%	—	—
6	Catarrhal jaundice	20.0	..	18.0%	..	..
82	Catarrhal jaundice	25.0	..	20.0%	..	—
99	Catarrhal jaundice defervescence	1.0	..	—	..	—
107	Arsenical poisoning; acute systemic syphilis	15.0	..	10.0%	..	..
Percentage positive.....		100%	100%	77.8%	66.6%	55.5%
Percentage negative.....		0	0	22.2%	33.4%	44.5%

TABLE 3.—*Results of Tests in Cases of Liver Disease with Jaundice Due to Stone or Tumor (Ten Observations)*

Case	Diagnosis	Van den Bergh	Widal	Dye	Urobilin	Bile Salts in Urine
1	Primary carcinoma of liver (necropsy)	0.5	..	11.0%	..	..
87	Carcinoma of pancreas and common duct	10.0	—	22.0%	—	..
88	Carcinoma of hepatic duct	20.0	—	13.0%	—	..
104	Carcinoma of head of pancreas; 10 wks. of jaundice	5.0	—	.....	—	..
		20.0	—	—	—	..
115	Carcinoma of head of pancreas; ob. jaundice	5.0	..	30.0%	—	—
		20.0	—	25.0%	—	..
		20.0	—	35.0%	—	..
98	Chronic cholelithiasis; stone in common duct	1.5	..	—	—	—
92	Cholecystitis; gallstones	5.0	..	—	..	—
Percentage positive.....		100%	40%	60%	30%	80%
Percentage negative.....		0	60%	40%	70%	20%

Table 3 shows the results of these tests in cases of jaundice due to stone or tumor. It will be noted again that the van den Bergh test shows an increase in circulating bilirubin in all cases. The Widal test is positive only in those cases due to stone, and in the case of primary carcinoma of the liver, with the exception of one slight reaction, in case 104, after there had been complete obstruction due to tumor at the head of the pancreas for ten weeks. It was persistently negative in all of the observations in jaundice due to tumor obstructing the ducts, with the exception noted above. This is the one laboratory finding which in our experience has enabled us to differentiate between jaundice due to growth obstructing the ducts and that due to stone or catarrhal jaundice in the stage of complete obstruction. The dye test was not always positive. In the cases of obstructive jaundice it generally paralleled the bilirubin retention, except in two cases of cholelithiasis and cholecystitis proved at operation, in which it was negative. Urobilin and urobilinogen were present in all except one case when bile reached the intestine, but were absent in all cases during the completely obstructive phases. Bile salts were found in all cases except the two previously mentioned in which the dye test was negative, and late in case 104, when, after ten weeks of complete obstruction, the bile salts disappeared.

TABLE 4.—*Results of Tests in Cases of Liver Disease Without Jaundice (Six Cases)*

Case	Diagnosis	Van den Bergh	Widal	Dye	Urobilin	Bile Salts in Urine
86	Metastases; carcinoma of liver and uterus	0.2	..	0	..	0
9	Obesity and umbilical hernia; cholecystitis; enlarged liver	0.6	0	0%	0	0
81	Splenomegalic cirrhosis	1.25	..	0	..	..
58	Pernicious anemia	1.25	..	0	..	0
65	Splenomegalic cirrhosis	0.03	0	0%	..	..
85	Cardiac failure with slight jaundice	1.25	0	0	0	0
Percentage positive.....		66.3%	50.0%	33.3%	66.0%	33.3%
Percentage negative.....		16.0%	50.0%	66.6%	33.3%	66.6%

TABLE 5.—*Results of Tests in Cases with Clinical Conditions in Which Liver Disease Is Suspected (Thirty-Seven Observations)*

Van den Bergh		Widal		Dye		Urobilin		Bile Salts	
Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
37.9	62.1	59.4	40.6	16.2	83.8	32.5	67.5	48.6	5.14

Table 4 shows the results in the cases in group 2. The van den Bergh test was positive in 83 per cent, the Widal in 50 per cent, the dye in 33 per cent, urobilin and urobilinogen in 63 per cent, and bile salts in 33 per cent. The dye test and the bile salt test were the only ones not positive in the majority of the cases.

TABLE 6.—*Results of Tests in Cases with Clinical Conditions in Which Liver Disease Was Unsuspected (Thirty-Eight Observations)*

Van den Bergh		Widal		Dye		Urobilin		Bile Salts	
Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
42.1	57.9	39.4	60.6	10.5	89.5	5.5	94.5	23.6	76.4

TABLE 7.—*Results in Groups 2, 3 and 4*

	Van den Bergh	Widal	Dye	Urobilin	Bile Salts
Group 2: Liver disease without jaundice.....	83.3	50.0	33.3	66.6	33.3
Group 3: Suspected liver disease.....	37.9	59.4	16.2	32.5	48.6
Group 4: Unsuspected liver disease.....	42.1	39.4	10.5	5.5	23.6

Table 5 comprises the observations in group 3, and table 6, those in group 4.

Table 7 comprises the results of these tests in group 2 (liver disease without jaundice); group 3 (suspected liver disease), and group 4 (unsuspected liver disease).

SUMMARY

In group 1-A, toxic jaundice, all the tests were positive. In group 1-B, obstructive jaundice, in all cases due to stone, all the tests were positive; in all cases due to tumor of the pancreas or biliary ducts, all the tests were positive in each case except the Widal, which was negative in all.

In group 2, clinical liver disease without jaundice, the tests did not yield uniformly positive results. In no case were all positive; in two cases, four of the five were positive, and in the remainder, from one to three were positive.

In group 3, cases in which liver disease was suspected but not clinically demonstrable, no case yielded positive reactions to more than three of the tests; in some, three were positive, but in the majority, only one or two were positive.

In group 4, cases in which no liver injury was suspected, the results were similar to those of group 3.

COMMENT

In any attempt to evaluate these tests, an explanation must be found for the relatively high percentage of positive findings for all of them in groups 3 and 4, as shown in table 7. There are two possibilities, namely:

1. That none of these tests are specific for liver dysfunction.
2. That these tests are specific for liver dysfunction, but that many persons have latent liver damage or liver dysfunctions that are transient and are undetectable by ordinary means.

Credence for the first possibility can be given only if these tests are positive in perfectly normal persons. The persons usually employed for controls are hospital patients who may well have latent injury regardless of the clinical diagnosis. To check this hypothesis we have performed Widal tests on twenty-five normal volunteers, nurses and laboratory technicians who have not been ill for a period of twelve months and who have never had any affections of the appendix, gallbladder, liver or its ducts. In each instance the test was negative. We are able to conclude, therefore, with Feinblatt, who found negative tests in each of eighty medical students, that the Widal test is not positive in normal persons. Rosenthal states that in normal persons, if 5 mg. of phenoltetrachlorphthalein per kilogram of body weight is injected intravenously, all is eliminated in one hour, but he regards from 2 to 3 per cent as within the normal limit.

The second hypothesis seems, therefore, to be the more logical one. These patients were ill in bed, and latent liver injury may have been present. With this in mind one must be careful in the choice of normal controls and must not use cases such as those of the Mayo Clinic series,[7] as in our experience cases with chronic infectious processes do give positive reactions to some of these tests.

CONCLUSIONS

1. It is important to bear in mind that these tests represent different functions of the liver. Any one or more or all of these functions may become impaired. Again, one or more of these functions may escape injury. Therefore the various tests do not give parallel results. When we attempted to separate clinical cases into groups of liver disease or no liver disease by means of any one of these tests, unsupported by other clinical evidence, we were unable to do so.

2. When all the tests were positive, we were dealing with liver disease, clinically of the most severe type; namely, toxic jaundice.

3. When all tests were positive except one, namely, four positive and one negative, clinical liver disease was present, usually of a chronic type, such as that seen in Banti's disease or pernicious anemia and cirrhoses.

4. In every case in which all the tests were positive except the Widal, there was obstructive jaundice due to tumor. This finding is of great value in differential diagnosis.

5. When only three tests were positive it was impossible to correlate the findings with the clinical picture, as there were many cases in which liver disease was suspected which did not give positive reactions to more than one or two tests and, conversely, there were many cases in which liver disease was unsuspected which gave as many positive results.

6. At present they are of use chiefly in the differential diagnosis and in following the progress of a given case.[8] The greatest amount of information can be gained by doing all the tests simultaneously and repeating them often.

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SIGNIFICANCE OF THE BLOOD CHEMICAL CHANGES IN PERTUSSIS

THERAPEUTIC INDICATIONS *

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Important advances have been made in the study of whooping cough in recent years, along the lines of bacteriologic and serologic research. The etiologic relationship of the bacillus described by Bordet and Gengou has been more definitely established, and Bordet has applied his fundamental work in immunology to the development of a complement fixation test for the diagnosis of the disease, which may permit the recognition of the abortive, rudimentary or atypical forms. A vaccine prepared from *Bacillus pertussis* has been utilized in prophylaxis and treatment, but vaccine therapy has given such inconstant results that a considerable difference of opinion exists as to the curative value that it may possess. A mixed vaccine apparently has a definite prophylactic value against the bronchopulmonary complications. Recently, much interest has been aroused in the roentgen-ray treatment of the disease, described by Bowditch.[1] Several favorable reports relative to its use were made at first, but the discussion which followed the recent paper by Smith and his associates[2] brought up the pertinent facts of the effect of the treatment on the thyroid and thymus as well as the value of the remedy. The recent report of Faber and Struble was not favorable.[3] The mode of action of the roentgen ray was thought at first by

8. The use of these tests in the differential diagnosis of jaundice and in the estimation of the progress of a given case will be presented in a subsequent paper.

* From the Kingston Avenue Hospital of the Department of Health, and the Kings County Hospital Laboratories.

1. Bowditch, H. I., and Leonard, R. D.: Preliminary Report of the Treatment of Whooping Cough by Means of the Roentgen Ray, Boston M. & S. J. **118**: 312 (March 8) 1923. Bowditch, H. I.: Further Notes on the Treatment of Pertussis by Roentgen Ray, J. A. M. A. **82**: 1422 (May 3) 1924.

2. Smith, L. W.; Bowditch, H. I., and others: Treatment of Pertussis by Roentgen Ray, J. A. M. A. **85**: 171 (July 18) 1925.

3. Faber, H. K., and Struble, H. P.: Does Roentgen Ray Modify the Course of Whooping Cough? J. A. M. A. **85**: 815 (Sept. 12) 1925

Bowditch to be the result of an effect of the rays on the tracheobronchial adenitis and later by Smith and Bowditch surmised to be due possibly to an influence on the calcium content of the blood, although they had no opportunity to make actual determinations. It is important to recall here, in view of the results we are reporting, that Hussey [4] found that the roentgen ray induced a condition of alkalosis in rabbits, as confirmed by Victor Myers [5] in clinical cases of carcinoma treated by the roentgen ray.

In a recent paper,[6] a brief outline of the results obtained in an analysis of 200 specimens of blood from pertussis cases was made. Attention was drawn to two alterations detected with considerable constancy; namely, a diminution of the total inorganic phosphorus content of the plasma, and a change in the hydrogen ion concentration. We now present further data relative to the blood chemical findings of this disease, giving the results in somewhat more detail, and outline briefly the apparent effect of the administration of alkaline salts on the chemical changes of the blood and on the course of the disease.

Our study was carried on during the summer and early fall of 1924 and 1925. There were more than

TABLE 1.—*Blood Chemical Determinations in Pertussis Before Treatment*

		Blood in Pertussis			
				Range	
	Normal Blood Values	No. of Determinations	Average Value	Minimum	Maximum
Hydrogen ion concentration	7.35-7.40	37	7.29	6.95	7.45
Phosphorus (inorganic)	4.5-7.0 mg.	37	2.4	0.7	3.6
Calcium	10.5-11.5 mg.	32	10.5	8.5	13.3
Carbon dioxide	53-77 % by vol.	20	56	42	68
Urea	20-35 mg.	25	27	18	37
Uric acid	2-3 mg.	34	3.3	1.2	5.5
Creatinine	1-2 mg.	27	1.1	0.9	1.3
Sugar	68 mg.	23	65	50	76

111 patients with mild, moderate or severe pertussis in the group, the ages ranging from 4 months to 12 years, 78 per cent being over 3 years of age.

BLOOD CHEMICAL DETERMINATIONS

The investigations included the following analyses: hydrogen ion concentration, 146; inorganic phosphorus, 211; calcium, 58; carbon dioxide, 83; urea, 38; uric acid, 59; creatinine, 44; sugar, 43; total determinations, 682.

The blood was taken in the morning before breakfast, and the examination was carried out promptly, or the blood was stored for a short period in the icebox after transportation to the laboratory. The usual precautions necessary in collecting specimens for determinations of the p_H were utilized, such as short compression of the arm, the avoidance of air entering the syringe, and the injection of the blood into paraffin coated bottles under liquid petrolatum.

Values for Urea, Uric Acid, Creatinine and Sugar.—The determinations gave values which, on the average were within the normal range for urea, creatinine and sugar. The uric acid figures on the average were slightly above the high normal values for this constituent.

Carbon Dioxide Content of Plasma.—The average value for carbon dioxide was in the lower part of the normal range. Thus, in twenty moderate or very severe cases before any treatment, the average figure was 55.3 per cent by volume, while in twenty-four mild untreated cases the average figure was 60.8. Obviously, there was no definite pathologic change, as the patients were all children, with one exception.

Phosphorus Content.—The total inorganic phosphorus content of the serum showed a diminution which was so constantly encountered that, with the alteration in p_H previously mentioned, we have called it characteristic (table 1).

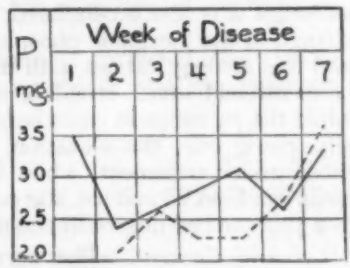

Chart 1.—Inorganic phosphorus in blood in pertussis: solid line, treated cases of moderate and severe pertussis; broken line, mild and untreated cases.

When the first low values for phosphorus were encountered, the possibility of a rachitic basis was considered. As further study was made, we felt that this possibility could be dismissed, for several reasons. As mentioned before, more than 78 per cent of the children were over 3 years of age or beyond the period when active rickets is so common; none of the patients except a few of the infants had any active signs of rickets; the accentuation of the diminution of the phosphorus was entirely unrelated to the age of the patient, bearing a relation only to the stage and duration of the disease; the rise in inorganic phosphorus occurred without any of the classic antirachitic means of treatment, and was induced in a number of cases, especially in those in which the disease was treated early, with a remarkable rapidity, as will be shown later by the administration of alkalis. Moreover, the hydrogen ion concentration of the blood is lowered, a condition not spoken of in rickets.

Beginning in the latter part of the catarrhal stage of pertussis, a lowering of the total inorganic phosphorus of the blood occurs (1.6, 1.7 and 2.5 mg. in three cases), which is already well established in the very first week of the paroxysms (1.5, 1.7, and 2 mg. in four cases).

TABLE 2.—*Blood Chemical Determinations in Pertussis in Relation to Treatment* *

	No. of Determinations	Before Treatment	No. of Determinations	During Treatment	No. of Determinations	After Treatment
Hydrogen ion concentration	37	7.29	46	7.37	25	7.43
Phosphorus, total inorganic	37	2.4 mg.	56	2.6 mg.	47	3.1 mg.
Calcium	32	10.5 mg.	13	9.9 mg.	9	10.5 mg.
Uric acid	11	3.4 mg.	14	3.3 mg.	7	3.9 mg.
Carbon dioxide	20	56 % by vol.	22	52 % by vol.	18	57 % by vol.

* This table shows the changes that occur in the blood under alkali treatment.

In moderate and severe types of the disease treated by alkalis, there is an average rise in the third week in phosphorus, which continues in the fourth and fifth weeks, with a slight fall in the sixth week, and the highest level in the seventh week (chart 1). In mild cases untreated by alkalis, there is on the contrary a lower average curve, so that after a temporary rise in the third week, the average continues low in the fourth and fifth week, beginning to rise in the sixth week (chart 1).

4. Hussey, R. G.: The Influence of X-Rays on the Properties of the Blood, J. Gen. Physiol. **4**: 511 (May) 1922.
5. Myers, V. C., and Booker, L. E.: Some Variations in the Acid Base Balance of the Blood in Disease, J. Biol. Chem. **59**: 699 (April) 1924.
6. Regan, J. C., and Tolstouhov, Alexander: Characteristic Changes in the Blood Chemistry in Whooping Cough, J. A. M. A. **86**: 181 (Jan. 16) 1926.

Hydrogen Ion Concentration.—The hydrogen ion concentration of the blood was determined in the plasma taken with usual precautions and was examined by either or both the electrometric or colorimetric method. The results show a change in the p_H which has been very accentuated in some analyses. The change in the p_H in the first five weeks of the disease (chart 2) in treated cases (moderate and severe type) corresponds, although it is less accentuated, almost exactly with the change in the inorganic phosphorus in the same period, and this analogy carries with it an importance that will be mentioned later. It will be observed here again that, while the p_H curve in cases before treatment is a gradually rising one, the elevation is more accentuated in those under treatment, while in those in which treatment has been completed, the curve is suddenly elevated to a pronounced degree in the third and fourth week.

Calcium Content.—The normal calcium content of the serum of infants and young children averages, according to Howland and Kramer,[7] between 10.5 and 11.5 mg., and according to de Wesselow,[8] who includes general grouping apparently of all ages, as between 9 and 11 mg. per hundred cubic centimeters. In the cases of petussis studied, the calcium determinations carried out in fifty-eight specimens of serum gave figures showing some variations, but averaging before treatment 10.5 mg. in thirty-four analyses. In only eight, or 23 per cent, was there more than 1 mg. less than the normal value as given by Howland and Kramer, and only two, or 5.3 per cent, of these eight were below the normal range according to de Wesselow's figures. This variation of 1 mg. in a few cases is not significant as an alteration because of possible error in determinations. Therefore, we do not consider the calcium content altered in any constant way in pertussis, although it is possible that slight changes may occur as the result of shifting of calcium in connection with the characteristic phosphorus and p_H alterations.

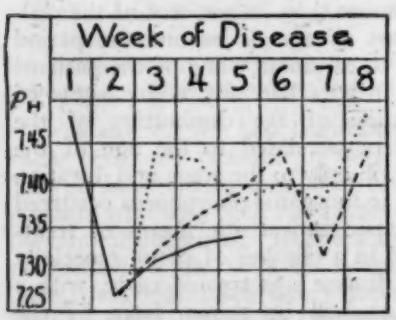

Chart 2.—Hydrogen ion concentration of blood in pertussis: solid line, before treatment with alkalis; broken line, during treatment; dotted line, after treatment.

SIGNIFICANCE OF BLOOD CHEMICAL CHANGES

As the carbon dioxide content of the plasma showed a normal range, and yet was associated with a lowering of the hydrogen ion concentration and of the inorganic phosphorus, we consider it proved that there occurs in pertussis an acidosis of an uncompensated type (type 6, Van Slyke classification),[9] which has as a cause the accumulation or increased concentration of free carbon dioxide in the blood.

Many of the symptoms so prominent in the clinical picture of pertussis may be very well correlated to conform with this point of view. The peculiar and unique character of the paroxysms surely interferes considerably with the ventilation of the lungs at this time, and is probably associated with increased alveolar air tension, an assumption warranted also by reason of the well nigh constant occurrence of some degree of parenchymatous emphysema in patients with pertussis. The alterations in the tracheobronchial tract, still poorly understood, may also enter potentially as factors. Vomiting and convulsions are frequent symptoms, and in many instances the gastric troubles occupy such a conspicuous place in the clinical syndrome that they have given rise to the description of a gastric form of the disease, in which gastric intolerance is a conspicuous symptom. It is our belief that the vomiting in the disease is a compensatory process which endeavors by elimination of very acid gastric contents to maintain the normal acid base balance.

Theoretically, if an acidosis of an uncompensatory type, as described, exists, the supplying of the organism with alkaline salts might restore the ratio between bicarbonate and free carbon dioxide. Practically this occurs.

In our cases, the hydrogen ion concentration of the blood has been changed to normal or to the alkaline side of normal (table 2) by the administration of various combinations of bicarbonate, calcium carbonate, and magnesium oxide. In such instances we have observed, accompanying the change in reaction of the blood, a rise of inorganic phosphorus. In cases in which the disease has been seen in the early paroxysmal stage, the remarkable fact was observed that under the administration of alkaline salts the inorganic phosphorus content of the blood may be elevated so quickly that the figure obtained before treatment is started may be doubled within one week. Thus, a reading of 2.6 mg. changes to 5.5 and again from 1.7 mg. to 4.3.

This change in the characteristic chemical values has been accompanied by pronounced clinical improvement, with remarkable and rapid amelioration of the distressing symptoms, so that vomiting would cease, on an average, in from four to five days and whooping in from eight to ten days, with occasional exceptions. The patient's general appearance showed corresponding improvement, and there was a gain in weight.[10]

In a small number of cases in which we had the opportunity of starting treatment in the late catarrhal stage, the disease was aborted before typical paroxysms were established, and this naturally brings up the thought of the possible prophylactic value of alkalis perhaps in conjunction with vaccine. In patients treated in the early and middle paroxysmal stage, the disease was quickly cured. It may be said, and this is a significant fact, that the cure bears no relation to the week of the disease when the treatment was begun, being as effective if not more so in the cases treated early as those treated late (table 2). We have not considered it advisable to use the treatment in bronchopneumonia complications, and instead have employed the mercury quartz lamp with good results. Our moderate and severe cases were treated by various combinations of alkaline powders—sodium bicarbonate, calcium carbonate and magnesium oxide. Mild cases were untreated. The alkalis used were selected mostly from an empiric standpoint, the original basis being the clinical effect of Sippy treatment for gastric ulcer in a

7. Howland, John; and Kramer, Benjamin: Calcium and Phosphorus in the Relation to Rickets, Am. J. Dis. Child. **22**: 106 (Aug.) 1921.
8. De Wesselow, O. L. V.: The Chemistry of the Blood in Clinical Medicine, London, 1924, p. 30.
9. De Wesselow, O. L. V.: The Chemistry of the Blood in Clinical Medicine, p. 52.
10. In routine treatment, it has been customary, at first, to start therapy by the administration of sodium bicarbonate in 30 grain (2 Gm.) dosage every half to one hour until from four to five doses have been given. Then the administration is begun of alkaline powders, mentioned in the previous paper, containing magnesium oxide, 15 grains (1 Gm.), with sodium bicarbonate, 15 grains, and calcium carbonate, 15 grains, with sodium bicarbonate, 15 grains, alternately each, three times daily given in milk, the powders being mixed with an equal amount of sugar and 1 drachm of milk (warm) and half a cup of milk added.

patient[11] with severe pertussis and an ulcer of the stomach. Before the chemical study, the calcium was continued to conform to the possibility that the convulsions so frequent in pertussis might be similar to those of tetany and hence connected with a lowered calcium content of the blood. The results of our blood chemical study appear to be entirely against this assumption, and we feel it would probably be sufficient in treatment to use only sodium bicarbonate in adequate doses, in order to restore the acid base balance to normal. In many cases showing gastric intolerance, lime water may also be given with the feedings with benefit and if, as in neglected cases of severe pertussis, starvation has complicated the condition, glucose may be used in conjunction with the bicarbonate.[12]

While the treatment proposed is, strictly speaking, apparently symptomatic, in that by adjusting an acid base unbalance it brings about changes in the organism which permit the return to a normal state, yet it probably is very intimately connected with the mechanism by which the termination of the vicious cycle accompanying the infection is brought about.

SUMMARY

A total of 682 blood chemical analyses performed in cases of pertussis have given the following results:

1. There is a diminution of the total inorganic phosphorus associated with a lowering of the hydrogen ion concentration of the blood, while the plasma bicarbonate remains within normal limits.

2. These changes occur early in the disease, appearing in the case of the inorganic phosphorus in the catarrhal stage.

3. Both alterations are well developed, especially the change in phosphorus, during the first few weeks of the paroxysms, and show a certain degree of parallelism in their course which signifies a close interrelation.

4. In moderate and severe cases treated with alkalis, the inorganic phosphorus rises steadily from the third week, while in untreated cases of the mild type, the rise does not begin until the sixth week. The same is true in a less decided way of a p_H value before, as compared to those during and after, treatment.

5. The diminution of inorganic phosphorus bears no relation to age, but only to the stage of the disease, and for reasons mentioned in the text has no underlying rachitic basis.

6. The calcium content, while exhibiting slight mobility, as the result, possibly, of shifting of calcium in connection with the characteristic phosphorus and p_H alterations, has no constant alterations of a distinct type.

7. These changes indicate an acidosis of an uncompensated type (type 6, Van Slyke), which has as a cause the accumulation or increased concentration of free carbon dioxide in the blood. This laboratory observation is easily correlated with several of the symptoms so prominent in pertussis—the paroxysms, the vomiting, parenchymatous emphysema and convulsions.

8. The vomiting of the disease may be a compensatory mechanism adopted by the body to eliminate acid in an attempt to maintain a normal acid base balance.

9. This contention of an uncompensated acidosis is further substantiated by the effects on the disease of alkali therapy.

10. Alkalis administered early appear usually to abort the disease, and associated with the cure is a rapid rise of inorganic phosphorus and a change in p_H of the blood, while, if given late, cure supervenes in a relatively short period.

CONCLUSIONS

There occurs in pertussis an uncompensated acidosis, which is intimately connected with the pathogenesis of the paroxysms.

If the acid base unbalance is corrected, the clinical symptoms are quickly ameliorated, and the organism returns to normal.

11. Regan, J. C.: Report of a Case of Pertussis Complicating a Gastric Ulcer, M. J. & Record **120**: 381 (Oct. 15) 1924.

12. A comparative study is now being made of the effect of irradiation by the mercury quartz lamp on the chemical change of the blood and on the clinical course of the disease.

USE OF IODIZED OIL IN DIAGNOSIS AND TREATMENT OF BRONCHIAL AFFECTIONS

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Iodized oil is used as an opaque medium in the roentgenographic study of body cavities. It was first employed by Sicard and Forestier in 1921 as an aid in locating and demonstrating obstructions of the spinal canal, and later was used successfully by the originators in exploring dilatations, fistulous tracts and cavities of the bronchial tree and the pulmonary tissues.

Since October, 1924, we have employed iodized oil in the form of bronchial injections as a diagnostic and therapeutic agent. This article is based on the results of this study and also the writings of Sicard and Forestier, Sergent and Cottenot, Nigoul-Foussal, Ballon, Archibald and others.

The iodized oil we have employed is the chemical compound of 40 per cent metallic iodine with oil of poppy seeds described and used by Forestier. The oil and iodine are so closely combined that the ordinary starch test fails to reveal free iodine.

Iodized oil is of clear amber color, is neutral in reaction, has a specific gravity of 1.350, and is insoluble in water or alcohol. The iodine may be liberated by the alkaline carbonates of the saliva and intestinal secretions, but is not affected by the gastric acidity. It becomes brown when exposed to the action of light, air, humidity and high temperature, because of the liberation of iodine. The high iodine content of the compound renders it opaque to the roentgen rays. The value of the oil as a diagnostic agent is due to its resistance to the roentgen ray and to its tolerance by the bronchial mucous membrane. The therapeutic advantages are due to the slow rate of absorption of the contained iodine without harmful effect on the patient. Iodism does not occur unless the oil is swallowed and subjected to the action of the intestinal secretions. The slow liberation of iodine prevents the danger of pulmonary congestion, which sometimes follows the use of iodides. It must not be used, however, when brown, on account of the caustic effect of free iodine.

There are four methods of introducing iodized oil into the bronchial tree: namely, the supraglottic, the transglottic, the subglottic and the bronchoscopic. In the first and second procedures, a curved cannula is used. In the subglottic method, a hollow curved needle

is passed through the cricothyroid membrane into the trachea, while in the fourth the oil is introduced through the bronchoscope.

The following general principles should be observed in all methods:

1. The use of discolored oil should be avoided.
2. Warm oil should be used, as it flows more freely and lessens the tendency toward cough.
3. Solutions for anesthesia should be warmed.
4. Roentgenographic exposures should be made as soon after injection as possible, and cough should be prevented by any unnecessary movements of the patient.

METHODS OF INTRODUCTION

Supraglottic.—In some patients the injection can be made without local anesthesia, but a better procedure is to swab the pharynx, soft palate (velum) and the base of the tongue with a 10 per cent cocaine solution. After an interval of three minutes, 1 cc. of warmed 1 per cent cocaine solution should be dropped into the glottis with the aid of a laryngeal mirror, syringe and curved cannula. Five minutes later the injection can be made. The patient sits facing the operator and slightly inclined toward the side to be injected, and is instructed to pull the tongue forward and breathe normally throughout this stage of the operation. A 20 cc. syringe filled with warmed iodized oil is firmly attached to a 6 inch cannula having its distal end curved to a right angle or less. With the aid of a laryngeal mirror, the tip of the cannula is introduced behind the base of the tongue held over the glottis, and the oil is slowly expelled from the syringe into the larynx. We have found that it is best to give no instructions to the patient regarding the manner of breathing, except in case of threatened cough, when a deep inspiration is advised.

Transglottic.—This method of injection is made with the tip of the cannula passed through the glottis into the trachea. The pharynx, velum and base of the tongue are anesthetized as in the supraglottic method, but for the larynx and trachea the quantity of 1 per cent cocaine is increased to 1 to 3 cc., on account of the deeper degree of anesthesia required.

Subglottic.—In this method, devised by Rosenthal, any difficulty in passing the larynx is avoided, and the oil is injected directly into the trachea. After anesthesia of the skin and subjacent tissue, a hollow curved needle attached to a metal guard is pushed through the cricothyroid membrane and into the lumen of the trachea. The position of the needle should be verified by attaching a syringe and aspirating, the withdrawal of air or mucus showing the needle to be in the trachea. From 1 to 2 cc. of warmed 1 per cent cocaine solution is then slowly injected through the needle, in order to anesthetize the mucosa of the trachea and bronchi of the desired area. The patient may cough for a short time. After from three to five minutes the iodized oil should be injected by means of a metal syringe firmly connected with the needle by a piece of strong rubber tubing. The tubing allows a certain motility of the syringe and must be strong to withstand the pressure necessary to force the oil through the needle.

POSITION OF PATIENT

The patient's position during injection is important as the distribution of the oil is determined by gravitation and the aspirating power of the lung. If one observes the progress of the oil on a fluoroscopic screen during injection, the greater portion may be seen to follow the most dependent bronchial trunks. For this reason the inferior lobes are most easily injected with the patient sitting. The oil is directed to the right or left bronchus by inclining the patient slightly in a corresponding direction during the injection. The middle and upper lobes can be injected only when the patient is lying, and with this position the supraglottic method is still effective, but the transglottic, the subglottic and the bronchoscopic may be used. To fill the apical bronchi, the patient should be placed on a tilting table with the desired side downward. A few seconds after the injection, the head of the table is lowered for a minute to permit the oil to flow into the upper lobe.

A useful exploration requires from 10 to 20 cc. of oil, and in the presence of large bronchial dilatations the lung will accept 40 cc. without evidence of distress. When injecting more than 20 cc. of oil, the transglottic, subglottic or bronchoscopic method is preferable.

COMMENT ON METHODS

In the application of any method, the patient should be told what is being attempted, and assurance given. In this way cooperation is obtained, time is saved, less anesthesia is used, and better results are accomplished.

The supraglottic method without anesthesia will seldom be successful with patients who are apprehensive or in whom the larynx and trachea are irritable from previous cough of long standing. Even with anesthesia, it is rejected by Forestier [1] as being rarely satisfactory. On the other hand, it is upheld by Claisse and Caussade.[2] In our experience, the supraglottic method with local anesthesia has been successful in the great majority of cases, and in the absence of unusual laryngeal irritability it is always tried first. The method, however, is more satisfactory in the injection of areas lying at or below the level of the lung roots, as the oil follows the path of least resistance.

Prior to the bronchial injection, the patient should have a physical examination of the chest and a roentgenologic study. When the examination is repeated after the injection, considerable information may be obtained regarding bronchial irregularities, the size, shape and position of the trachea, and a detailed knowledge of the contents of the lung root zone not otherwise revealed by any other diagnostic procedure. The roentgen-ray study should include oblique stereoroentgenograms in addition to the ordinary postero-anterior exposures. The trachea and its bifurcation are thereby clearly outlined, and images which otherwise would remain obscured by the cardiac and diaphragmatic densities are definitely exposed.

It is necessary to make the postoperative roentgen-ray study immediately following the injection, with as little disturbance of the patient as possible, for the reason that with the return of the cough reflex the larger bronchi may become partially emptied and valuable information be lost. Hence, in a patient showing unusual irritability of the trachea, it may be necessary to abandon the technic and make both the injection and the exposures on the roentgen-ray table.

The practitioner intending to use iodized oil in the diagnosis of pathologic conditions of the lungs should first practice injections in normal subjects, and so learn to recognize the shadows characteristic of all parts of the uninjured bronchial tree.

1. Forestier, Jacques: Iodized Oil in Radiologic Practice, Paris méd. **1**: 377 (April 26) 1924.
2. Claisse, P., and Serrand, J.: Bull. et mém. Soc. méd. d. hôp. de Paris **46**: 579 (April 7) 1922.

In the normal (fig. 1), the trachea and the large bronchi are shown in outline by the oil, which clings to their walls, but the smaller bronchi appear as continuous solid lines, which diminish in width as they approach the thoracic wall. Surrounding the bronchi, the filled alveoli are represented by a coarse stippling. After the patient has coughed, the hitherto unbroken line of the bronchial shadow becomes interrupted, but the alveolar shadows remain. This broken bronchial line can also be caused by the use of an insufficient quantity of oil. The alveolar shadows remain unchanged for about twenty-four hours and then gradually disappear during the ensuing ten days. Forestier [3] says that the urinary elimination of iodine passes its maximum after the third day but persists to the amount of several milligrams daily, as long as there are pulmonary shadows.

Fig. 1.—Outline of the trachea and its relationship to the arch of the aorta.

PATHOLOGIC PICTURE

The sharply defined outline of the trachea and its bifurcating branches enables one easily to recognize the exact site of conditions such as deviation or compression. It is unwise to dismiss the possibility of an anteroposterior compression of the trachea without the study of films taken in the oblique or lateral position (fig. 1).

Iodized oil, however, finds its greatest usefulness in the visualizing of bronchial dilatations and particularly in those earlier cases wherein cough is the chief or only symptom, and both physical examination and the roentgen ray fail to locate the focus. After injection, these early dilatations are shown as small, pouch-like shadows. Those of longer standing (more advanced) may be cylindric or may resemble a hanging bunch of grapes (fig. 2), drops of tar or even the fingers of a glove, as described by Sergent and Cottenot.[4] These abnormal shadows stand out in excellent contrast with the regular and more delicate outlines of the surrounding normal area.

The presence of fragmented bronchial lines in films made before the patient begins to cough may be considered as evidence of the presence of abnormal bronchial secretions, provided one can exclude an insufficient quantity of oil as a cause.

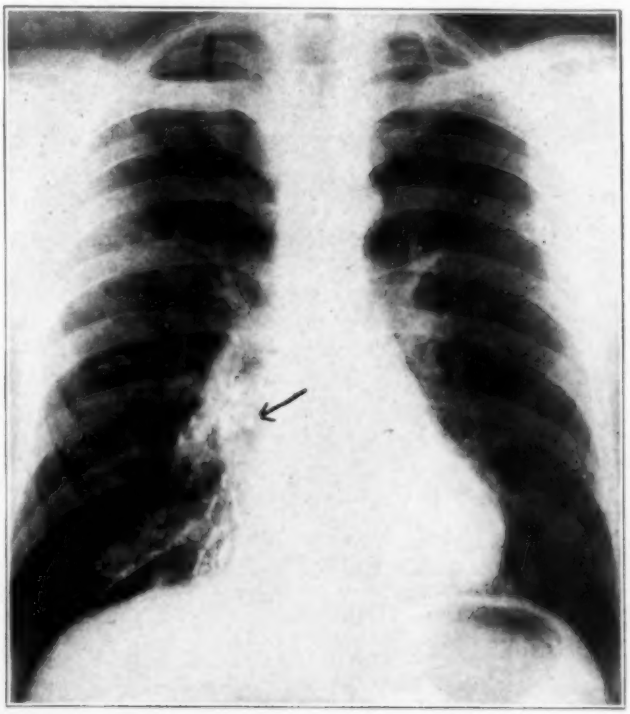

Fig. 2.—"Bunch of grapes" bronchiectatic area, revealed by the injection of iodized oil.

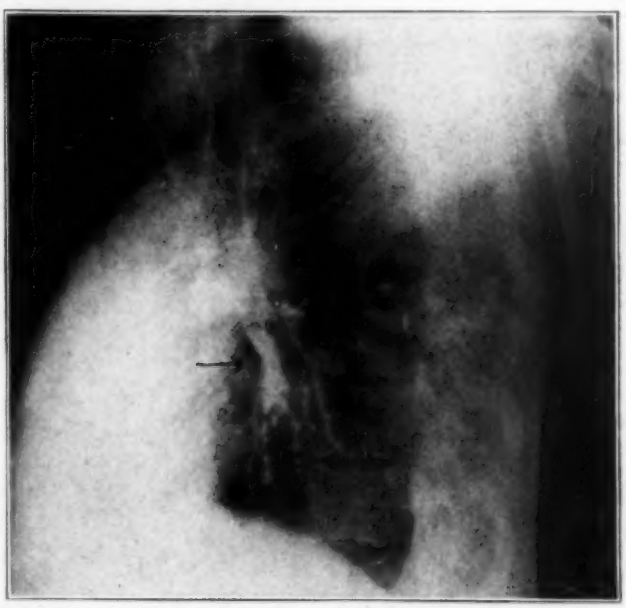

Fig. 3.—A well visualized lung abscess in the left thorax caused by a long embedded foreign body, which was recently removed from the left bronchus.

3. Sicard, J. A., and Forestier, Jacques: J. de méd. franc. Paris 13:3-9, 1924.

4. Sergent, Emile, and Cottenot, P.: Presse méd. 33:500 (April 18) 1925.

It is evident, then, that any pulmonary cavity can be shown roentgenographically if its bronchial outlet allows the inflow of iodized oil. We have not found occasion for injecting a tuberculous pulmonary cavity, but we have succeeded in locating the cavity of a foreign body abscess which, on the regular film, remained hidden (fig. 3.) This fact suggests that this procedure with serial oblique films might be a valuable aid in thoracic surgery. In the exploration of thoracic fistulas, the fluidity of iodized oil renders it superior to bismuth paste. Archibald [5] has drawn attention to the value of this oil in demonstrating the persistence of tuberculous cavities and bronchial dilatations after thoracoplastic operations.

We find the injection of iodized oil of great value in patients presenting symptoms of persistent cough, occasional fever and expectoration free from acid fast bacilli. These patients complain of exhaustion and are underweight. Their cases are frequently diagnosed as tuberculosis, and the physical examination, laboratory findings, and roentgenologic study give no definite information as to etiology. The following cases will illustrate the point:

M. C., a man, aged 36, 5 feet 6 inches (168 cm.) tall, weighing 131 pounds (59 Kg.), with an average weight of 140 pounds (64 Kg.), was pale, was nervous, and tired easily. A chronic cough persisted for eight years, following influenza. The expectoration was scanty and revealed no acid fast bacilli or elastic tissue. At times the cough was increased in severity, and some slight degree of fever was present. The patient complained of a heavy dull pain under the middle of the sternum. He had been told that he had tuberculosis. After a careful physical examination, laboratory

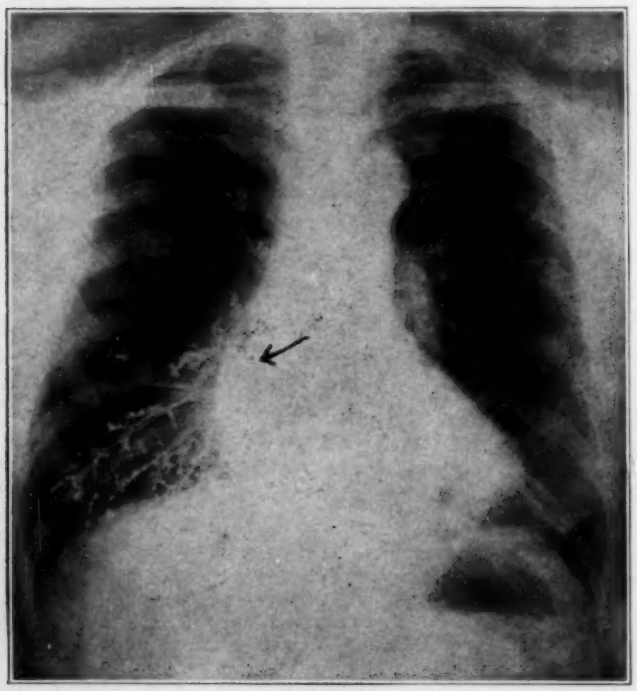

Fig. 4.—Large irregular bronchiectasis, not discovered until after the injection of iodized oil.

test and roentgen-ray study of the chest, no abnormalities were found, except rhonchi over the right lung root zone in the back. Iodized oil was injected into the right root and base, and a distinct bronchiectatic dilatation (fig. 2) was shown at the edge of the right lung root density. The patient was given an injection of 10 cc., once a week for six weeks and, eight months later, he reported that since then he had had no cough or expectoration and felt well. The supraglottic method was used, and no local anesthesia was administered after the first injection.

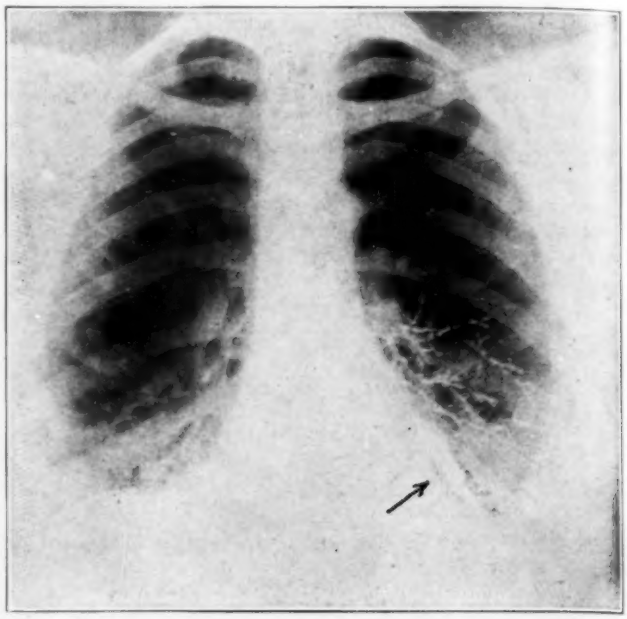

Fig. 5.—Cylindric type of bronchiectasis, revealed after the introduction of 15 cc. of iodized oil into the left lower bronchial tree.

M. K., a woman, aged 52, had had chronic cough, associated with about 10 to 20 cc. of purulent but odorless expectoration daily, following an acute bronchitis five years previously. No acid fast bacilli or elastic tissue was found (pig inoculation). There was no clubbing of the fingers, no loss of weight or history of fever. The patient complained of fatigue and of the annoying cough and expectoration. Physical examination and roentgenologic studies of the chest showed no abnormalities, except that the right root shadows were somewhat prominent. The nose and throat were normal. Twenty cc. of iodized oil was injected into the right lung root zone by the supraglottic method. A very distinct irregular bronchiectatic dilatation (fig. 4) was revealed in the inner right lung root zone, over which grouped râles were found, the result of the retention of the oil. This area was in all probability the seat of the bronchial affection; lack of drainage caused a persistent multiplication and accumulation of bacteria. Fourteen injections of 12 cc. of iodized oil were given this patient at intervals of not less than five days, the object in treatment being completely to fill the small bronchial dilatations. Five months after the last injection, the patient reported much less expectoration and only a slight cough.

M. P., a woman, aged 36, had had a cough since she was 18 years of age, following a severe attack of acute bronchitis. For the past twelve years, the cough had been loose, productive and became worse on lying down. The sputum was yellow, offensive and from 30 to 40 cc. in quantity daily; no acid fast bacilli or elastic tissue was found (pig inoculation). The fingers were definitely clubbed. The nutrition was good. There were occasional attacks of fever. For the past three years, the condition had been growing worse. Scattered rhonchi were heard on physical examination of the chest. Anterior and oblique stereoroentgenograms showed no abnormal densities. The nose and throat were normal. Fifteen cc. of oil was injected into the right lung root and descending bronchial tree, with no signs of dilatation. Later, the left root and descending bronchial areas were injected, and a number of cylindric bronchial dilatations were found (fig. 5). Sixteen injections of 10 cc. each were given over a period of eleven weeks. Four months after treatment, the patient

5. Archibald, Edward: Canad. M. A. J. 15: 1000 (Oct.) 1925.

showed a marked improvement. The sputum had greatly decreased in amount and was odorless. A slight cough remained, but the patient reported that she has never felt so well in years.

CONCLUSIONS

1. By the injections of iodized oil into the bronchial tree, small bronchiectatic dilatations in and around the roots of the lungs and cylindric fusiform enlargements of the descending branches may be revealed in many cases of chronic cough, which a previous exhaustive examination of the chest failed to show.

2. The entire bronchial tree cannot be visualized at one injection. Small sections should be injected at intervals until any abnormality is discovered or the entire field is studied.

3. The nose and throat should be studied in all cases. Bronchiectatic cavities occur as the result of chronic upper respiratory infections, and may continue to cause cough after the tonsils are removed or the sinuses drained.

4. In the majority of cases, we feel that the supraglottic method of injecting the lung roots and descending branches of the bronchial tree takes less time, less anesthesia, is less worry to the patient and gives results quite as satisfactory as other methods.

5. It is not necessary to use extensive local anesthesia in the majority of cases.

6. In more than 600 bronchial injections of iodized oil, we have seen no ill effects in our patients. No cases of iodism occurred.

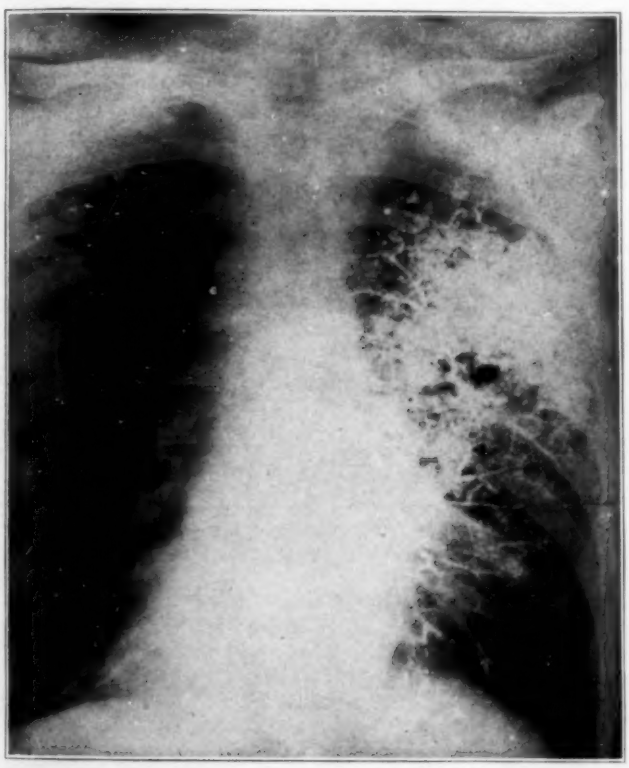

Fig. 6.—Result of an excessive amount of iodized oil obliterating the bronchial markings. Injection by the subglottic method.

7. The technic is not difficult. It requires no special training.

8. Negative results of an injection are no diagnostic proof that bronchiectatic dilatations do not exist.

9. The therapeutic use of iodine is not new but this compound of iodized oil is a new combination and, as a result of the slow liberation of the iodine in the bronchial tree, acts as an ideal treatment in chronic affections of the lower respiratory tract.

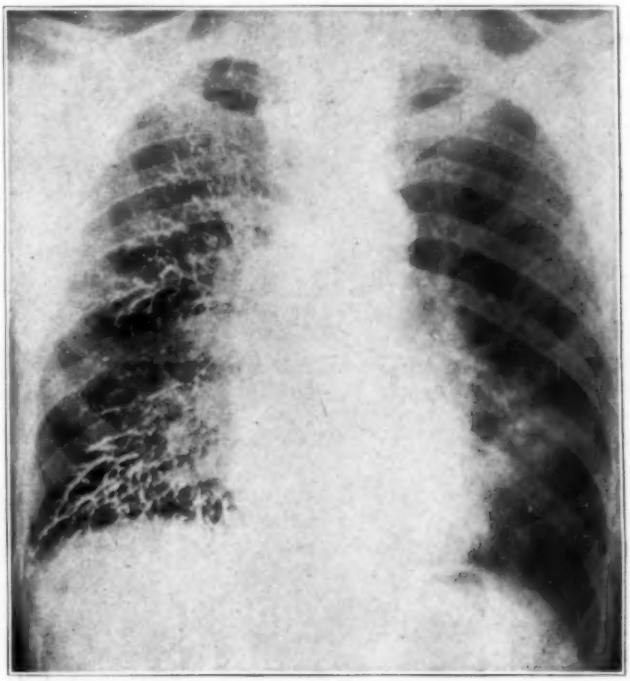

Fig. 7.—An evenly distributed injection of 25 cc. of iodized oil in the right bronchial tree, by the transglottic method duplicated later by supraglottic method.

10. In acute affections or pulmonary tuberculosis, we hesitate to inject iodized oil for either diagnostic or therapeutic purposes.

OMENTOPEXY IN CIRRHOSIS OF THE LIVER

REPORT OF CASE

FREDERICK W. LESTER, M.D.
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Cases of atrophic cirrhosis of the liver are still sufficiently common to attract the surgeon's attention for the relief of the ascites. These patients with various complicated lesions, and with a shaky cardiovasculorenal tripod, do not make desirable operative risks, and careful judgment is advisable in their selection.

The temptation to relieve the accumulations of fluid in the abdomen by repeated paracentesis is one to which the physician frequently succumbs. That such treatment is without substantial avail has long been known.

Binnie, quoting Wynter, says, "The price paid for the relief of the distention is the sacrifice of so much nutrient fluid," and Osler confirms this, stating that "the average duration of life in atrophic cirrhosis, after the commencement of tapping, is about fourteen weeks."

Omentopexy, or epiplopexy, known as Talma's operation, also termed Morrison's operation and Narath's operation, is a surgical procedure devised on a truly scientific basis, with the object of attempting to restore, at a single stroke, the normal function in an organ (the

liver) crippled by disease. That this restoration actually does take place as the result of omentopexy, even though it is deferred for a period of weeks, there can be no doubt.

In the chronic ascites that results from the interference with the portal blood circulation in advanced hepatic cirrhosis, omentopexy, by using the omentum in a variety of methods, as a carrier or go-between, attempts to effect an anastomosis between the visceral blood vessels and the peripheral circulation with the result, if successful, of not only relieving the ascites permanently, but also benefiting indirectly the other chief function of the liver, that of bile production.

Keen [1] mentions some of the older writers advocating surgical methods in dealing with ascites; for instance, Litthauer, Comer and Pinches, Sir Spencer Wells, Hearn and Péan. Their writings, with those of Talma, Morrison, Rubin and Narath, make up the rather meager literature of a generation ago. They are entitled to all honor as being the originators of omentopexy and the pioneers in the surgery of the omentum.

A search of the literature of the last few years finds numerous references to the surgery of the liver and omentum, but rather scant mention of the use of omentopexy in hepatic cirrhosis. Bremer,[2] Weber,[3] Loeper and Turpin,[4] Fiessinger and Brodin,[5] Tagliavacche,[6] Sternberg,[7] and Rowntree,[8] during the last two years, have described some of the phenomena attending the presence of ascites and the various methods of its treatment, both medical and surgical, including omentopexy. In these instructive papers may be found reports of the successful use of omentopexy in patients from the age of 16 upward. General agreement seems to place the rate of mortality for omentopexy at from 5 to 20 per cent. No long series of cases were reported.

Appearance of abdomen after omentopexy, showing "omental hernia" in epigastric region.

In the case described below, thirty-two months after operation, the result is so satisfactory that I feel greatly interested in this method of treatment. It may be of interest to others.

REPORT OF CASE

J. M., a white man, aged 67, had suffered for more than a year, with "stomach trouble," including nausea and indigestion, which began gradually. The family history was unimportant and the personal history presented nothing of special note, except that the patient had used strong chewing and smoking tobacco for many years and whisky, sometimes a dozen drinks a day, for the past two or three years. April 9, 1923, he had hemorrhoids and hydrocele of the right tunica vaginalis testis; there was an accumulation of fluid in the abdomen. Liver dulness was present, and the liver was palpable 2 inches (5 cm.) below the costal margin. The spleen was not palpable but showed an increased area of dulness. The heart presented a high pitched systolic murmur at the apex, with increase in size of the left ventricle. Rectal examination showed a prostate of normal size, with no tenderness. The hydrocele was tapped, and 400 cc. of fluid evacuated; one hemorrhoid was removed by clamp and cautery. May 15, the abdomen was full of fluid, distended and large.

Laboratory tests revealed that the specific gravity of the urine was 1.020, with a trace of albumin and a few light granular casts, but no sugar. The Wassermann reaction was negative to both antigens. Tallqvist's test gave 65 per cent of hemoglobin. No tuberculosis foci were found in the general examination. The stools were light brown.

The phenolsulphonphthalein test showed considerable reduction in the excretion of the dye, about 28 per cent being excreted in the first two hours.

The patient was admitted to the Memorial Hospital, Waterloo, N. Y., May 15, 1923. The working diagnosis was ascites from cirrhosis of the liver, chronic interstitial nephritis and mitral regurgitation, with hypertrophy of the left ventricle of the heart.

Operation was done, May 16, 1923, the Narath [9] technic being used. After the abdomen was opened through the right rectus muscle above the umbilicus, and all the fluid that could be secured, about 6,000 cc., was evacuated and sponged away, the omentum was brought out of the incision; it was rather short, not over 4 or 5 inches (10 to 13 cm.) long and nonadherent. The liver was then palpated and a general visceral examination made. No special abnormalities were noticed, except that the liver was rather stiff and indented on its external surface at numerous points. A pocket was then made at the right side of the incision by raising the skin and superficial fascia. Into this pocket was inserted a portion of the omentum, about three fourths of the total bulk, which was securely fastened there by means of several chromic catgut sutures. The portion of omentum, thus brought outside the abdomen, was then fastened around its base to the edges of the opening in the peritoneum through which it came, and the abdomen closed in layers without drainage, four or five silkworm interrupted sutures being used through the skin and fascia as supporting sutures. The time of operation was forty-five minutes; ether was given by the drop method.

The patient's immediate postoperative condition showed no serious effects, a little yellow fluid being vomited.

May 17, the abdomen was tympanitic.

May 18, gas came freely through the rectal tip, and the abdomen was softer. The temperature was 99.6; the pulse was 96.

May 23, drainage from the wound began and amounted to about 300 or 400 cc. daily of clear serous fluid.

May 26, the serous drainage changed to a bright green, and the amount became very much less.

May 28, drainage had stopped completely.

May 30, the supporting sutures were removed.

June 2, the patient was sent to his home.

June 9, fluid began to reaccumulate in the abdomen.

June 16, 4,000 cc. of fluid was obtained by paracentesis.

June 28, the fluid began to return.

July 9, the fluid was present but not increasing.

July 23, it was receding.

August 1, the fluid was completely gone.

Jan. 1, 1926, examination showed an abdomen with an "omental hernia" in the epigastric region, which caused the

1. Keen's Surgery **4**: 630.
2. Bremer, K.: Epiplopexy for Biliary Cirrhosis, South African M. Rec., October, 1924, p. 477.
3. Weber, F. P.: Hepatic Cirrhosis and Question of Operative Treatment of Chronic Ascites, May, 1924, Abs. Int. Survey Surg., p. 437.
4. Loeper, M., and Turpin, R.: Inhibiting or Retarding Action of Abdominal Effusions on Induced Glycosuria in Cirrhosis with Ascites, Progrès méd., May 3, 1924, p. 269.
5. Fiessinger, N., and Brodin, P.: Ascites and Jaundice in Cirrhosis of the Liver, Presse méd. **32**: 121 (Feb. 9) 1924.
6. Tagliavacche, N.: Ascites from Cirrhosis of the Liver, Prensa med. argent., June 10, 1925.
7. Sternberg, H.: Cirrhosis of Liver, Vienna Letter, J. A. M. A. **85**: 1573 (Nov. 15) 1925.
8. Rowntree, L. G.; Keith, N. M., and Barrier, C. W.: Novasurol in the Treatment of Ascites in Hepatic Disease, J. A. M. A. **85**: 1187 (Oct. 17) 1925.
9. Narath, P.: Operative Treatment of Hepatic Cirrhosis, Zentralbl. f. Chir., May, 1904.

patient no discomfort. He is able to work from six to eight hours daily at his trade. The right hydrocele requires tapping about once in six months. The liver showed no increase in size. Hemorrhoids were not present. The appetite and digestion were good.

COMMENT

1. The stormy convalescence, with no evidence of circulatory balance in the liver for from six to eight weeks, indicated that the anastomosis was, for that length of time, ineffective.

2. There were late good and permanent effects of the anastomosis.

3. No injurious effects resulted from diverting so large a part of the omentum from its usual location.

15 Cayuga Street.

PAROXYSMAL TACHYCARDIA ASSOCIATED WITH FOCAL MYOCARDITIS *

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AND
H. R. WAHL, M.D.
KANSAS CITY, KAN.

Tachycardia of ventricular origin is an uncommon condition, and the number of reported cases is comparatively small. Butterfield and Hunt,[1] Cohn,[2] Gallavardin,[3] Hart,[4] Lewis,[5] Marvin and White,[6] Robinson and Herrmann,[7] Scott,[8] Vaughan,[9] and Willius[10] have reported examples of such tachycardias. Scott, who reviewed the subject in 1922, doubted whether certain cases reported as ventricular tachycardia were correctly diagnosed, and states that, of twenty cases reported up to that time, the evidence is not convincing in more than half. Wolferth and McMillan,[11] in 1923, collected reports of twenty-two cases, which they regarded as examples of true ventricular paroxysmal tachycardia.

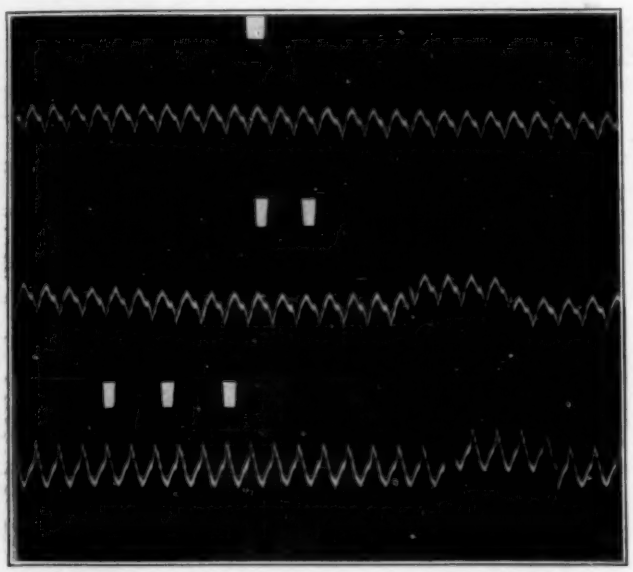

Fig. 1.—Condition, May 28, 1925: type of electrocardiogram usually associated with ventricular paroxysmal tachycardia.

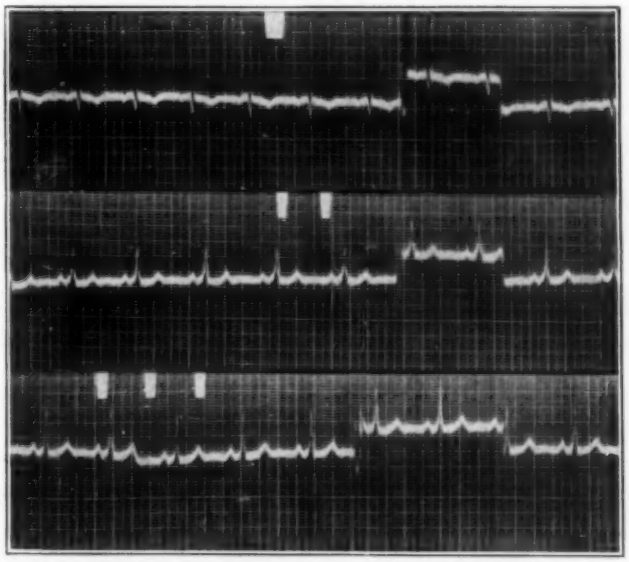

Fig. 2.—Condition, June 15, 1925: inversion of T wave in the first lead and distinct notching of R wave in the second lead.

Lewis has pointed out that the ventricular type of electrocardiogram is not necessarily due to paroxysmal tachycardia of ventricular origin, since a similar picture is produced when the excitation wave takes an abnormal course in the ventricle. One case of Marvin and White's probably belongs to this category, since it gave electrocardiograms of the ventricular type, although it was proved to be a tachycardia of auricular origin.

A patient whom we have recently studied showed a paroxysmal tachycardia of considerable interest from the standpoint of its causation and the type of electrocardiogram shown.

REPORT OF CASE

A man, aged 25, who had had two attacks of rapid beating of the heart since the age of 12, the last attack occurring six years previously, had suffered from infected tonsils for several years, and during the past eighteen months had known of the presence of several badly infected teeth.

The patient was admitted to the Bell Memorial Hospital, May 28, 1925, suffering from an attack of paroxysmal tachycardia, which came on without warning. Electrocardiographic tracings made during this attack are shown in figure 1. These tracings are of the type that is usually associated with a tachycardia of ventricular origin, although, as mentioned, the same type is occasionally encountered in certain tachycardias of auricular origin. We were unfortunate in not obtaining an electrocardiogram of either the beginning or the ending of the attack, which is a necessary criterion for establishing the positive diagnosis of ventricular paroxysmal tachycardia. The pulse rate varied from 200 to 240 per minute. The patient was given two-thirds grain (0.04 Gm.) of pantopium hydrochloricum (pantopon) by mouth and 0.025 mg. of ouabain

* From the departments of internal medicine and pathology, University of Kansas School of Medicine.

1. Butterfield, H. G., and Hunt, G. H.: Observations on Paroxysmal Tachycardia, Quart. J. Med. **7**: 209, 1913-1914.
2. Cohn, A. E.: The Present Status of the Electrocardiographic Method, Am. J. M. Sc. **151**: 529 (April) 1916.
3. Gallavardin, L.: Extrasystole ventriculaire à paroxysmes ventriculaires prolongés, Arch. d. mal. du cœur **15**: 298 (May) 1922.
4. Hart, T. S.: Paroxysmal Tachycardia, Heart **4**: 128, 1912.
5. Lewis, Thomas: The Mechanism of the Heart Beat, London, Shaw and Sons, 1920, p. 259.
6. Marvin, H., and White, P. D.: Observations on Paroxysms of Tachycardia, Arch. Int. Med. **29**: 403 (April) 1922.
7. Robinson, G. C., and Herrmann, G. R.: Paroxysmal Tachycardia of Ventricular Origin and Its Relation to Coronary Occlusion, Heart **8**: 59 (Feb.) 1921.
8. Scott, R. W.: Observations on a Case of Ventricular Tachycardia with Retrograde Conduction, Heart **9**: 297 (Dec.) 1922.
9. Vaughan, W. T.: A Study of Paroxysmal Tachycardia with Especial Reference to Tachycardia of Ventricular Origin, Arch. Int. Med. **21**: 381 (March) 1918.
10. Willius, F. A.: Clinical Electrocardiography, Philadelphia, W. B. Saunders Company, 1922, p. 88.
11. Wolferth, C. C., and McMillan, T. M.: Paroxysmal Ventricular Tachycardia, Arch. Int. Med. **31**: 184 (Feb.) 1923.

hypodermically. Three hours after this medication, the pulse rate suddenly fell to 100, and the patient was more comfortable. The next morning the pulse was 88, and he was dismissed from the hospital. June 15, 1925, electrocardiographic tracings were taken, which showed slight notching of the R wave in both the first and second leads and inversion of the T wave in the third lead. There were no extrasystoles seen (fig. 2).

At the time of discharge from the hospital, the patient was advised to have some dental work carried out, and during the summer several infected teeth were removed. The culture from these teeth showed an anhemolytic streptococcus, which was studied by Dr. R. L. Haden, who found that it showed a tendency to localize in the myocardium when injected into rabbits. The patient had a recurrence of tachycardia, Sept. 23, 1925, and at that time received 0.025 mg. of ouabain hypodermically, the injection being followed by a cessation of the attack. Five hours later another attack came on, and the patient died within three minutes of its onset. He was

Fig. 3.—A section through the left auricle, showing numerous collections of polymorphonuclear leukocytes and lymphocytes, slightly reduced from a photomicrograph with a magnification of 120 diameters.

observed in this attack by a physician, who stated that at the time of death there was a marked quivering over the precordium. We did not see the patient during this attack, but the description was suggestive of death from ventricular fibrillation.

The necropsy was limited to an examination of the heart. It weighed 335 Gm., was very flabby, and on the anterior surface there were several opaque patches, the evidence of old chronic pericarditis. The heart valves were normal in appearance; the base of the aorta showed numerous small yellow atheromatous plaques, measuring from 2 to 4 mm. in diameter. The coronary arteries showed grossly no sclerosis. A large number of sections were made through the walls of both auricles, the interventricular septum, and both ventricles. The sections through the left auricle showed areas containing foci of polymorphonuclear leukocytes, with collections of mononuclear cells and eosinophils (fig. 3). A similar picture was found in the sections through the right auricle, the left ventricle and the interventricular septum, including the bundle of His. There was a large amount of degeneration of the cardiac muscle fibers in all sections. One section through the left ventricle showed thickening and hyaline degeneration of the walls of the blood vessels and numerous patches of fibrosis in the myocardium. A section through the left coronary artery showed thickening of the intima, with vacuolar change in some of the cells. There were also some diffuse accumulations of mononuclear and polymorphonuclear leukocytes involving the inner portion of the media and intima. A section through the left coronary vein showed a small branch filled with pus cells.

The anatomic diagnosis was: acute and chronic myocarditis of the focal type; parenchymatous degeneration of the myocardium; aortic intimitis; early focal arteritis of the coronary arteries, and chronic pericarditis.

The evidence in this case favors the diagnosis of ventricular tachycardia, although this cannot be positively asserted. The association of the focal infection of the tonsils and teeth with foci of infection in the myocardium is very significant. We are probably dealing here with a tachycardia due to myocarditis, which was the result of the streptococcic focal infection from which the patient suffered. It is of extreme interest that the patient showed a definite early arteritis of the coronary arteries, apparently due to the same cause. He had atheromatous plaques on the aorta, which were far more numerous than would be expected in a man of his age. These findings bring up the question of the relationship between focal infection and arterial lesions, which have not been regarded by many observers as being entirely degenerative in their origin.

Very few necropsy reports on patients suffering from paroxysmal ventricular tachycardia have been reported. Robinson and Herrmann describe a thrombosis of the anterior descending branch of the left coronary artery in one of their cases, and Butterfield and Hunt found fibrosis of two thirds of the interventricular tissue in one patient at necropsy. Willius states that four of his patients gave definite histories of previous infection with the streptococcus group and that in one fatal case marked atheroma of the left coronary artery was found. In our patient we have, we feel, definite evidence of the rôle that streptococcic focal infection may play in cardiac and arterial changes.

Clinical Notes, Suggestions, and New Instruments

CUTIS VERTICIS GYRATA*

RAYMOND J. SISSON, M.D., DETROIT

Cutis verticis gyrata is a skin condition of rare frequency characterized by hypertrophy and looseness of the skin, with a tendency to hang in folds. The literature referable to it is very meager. I report this case because of its infrequency and of a glandular derangement, not previously observed, which is present.

CLINICAL HISTORY

M. C., a man, aged 29, with a dark complexion, seen, Nov. 25, 1924, complained of thickness of the upper eyelids. Since childhood the fingers and toes had been large. An "eczema" of the scalp five years ago yielded promptly to treatment. The onset of the present illness occurred five years ago. The scalp was first affected and the condition gradually spread over the forehead and eyelids. The weight of the lids was so great that the patient had considerable difficulty working.

Vision in both eyes was 20/30. A marked mechanical ptosis with thickness of both upper lids was present. There was no other ocular pathologic change. The skin of the forehead and scalp was markedly thickened and thrown into transverse folds and furrows. Much oily secretion was present on the skin of the forehead and scalp. The hair was coarse and oily. There was typical enlargement of the terminal phalanges.

* From the Massachusetts Eye and Ear Infirmary.

General medical examination revealed the presence of acromegaly. A roentgenogram showed a pituitary fossa of normal size and shape, and there was characteristic clubbing of the terminal phalanges. In addition, the outline of the lower end of the radius and ulna was somewhat irregular, suggesting periosteal proliferation. The tibia and fibula were considerably increased in width, and an increased density with irregularity of bone outline suggested periosteal proliferation. The clinical diagnosis was cutis verticis gyrata, acromegaly, and ptosis (mechanical).

Appearance of patient with cutis verticis gyrata, showing furrows of the forehead, ptosis and enlargement of the terminal phalanges, Nov. 25, 1925.

November 26, under local anesthesia, an elliptic strip, including conjunctiva and tarsus, was excised from the right upper lid for pathologic examination.

Six roentgen-ray treatments, one every two weeks, were given at the Massachusetts General Hospital, under the direction of Dr. C. G. Love of the skin department. There was definite relief from the oil, but no apparent change in the thickness of the lids. Further treatment was not advised. May 13, 1925, an elliptic piece of skin was excised from the left upper lid. The patient was last seen, June 2, 1925, at which time the condition was unchanged.

PATHOLOGIC EXAMINATION

The material examined consisted of one elliptic piece of tissue, including conjunctiva and tarsus, excised from the right upper lid, by Dr. F. H. Verhoeff. After formaldehyde fixation it was embedded in celloidin and sections were stained in hematoxylin and eosin. Dr. Verhoeff found chronic conjunctivitis with marked proliferation of palpebral conjunctiva with formation of glands. Many of the glands were distended with concretions. The tarsus was practically free from infiltration.

COMMENT

The name cutis verticis gyrata was chosen because the condition is characterized by furrows occurring in the skin over the crown and back of the head which suggest the appearance of gyri and sulci of the brain. The first clinical study of this condition was made by Jadassohn.[1] Unna[2] subsequently described it and gave it the name. All patients have been men who, with one exception, had dark complexions. Only a few cases have been reported, and none were associated with acromegaly.

Stelwagon[3] says: "The hypertrophic form of dermatolysis may be congenital or acquired, and vary in its limitation and in the region affected. All parts of the skin, including the follicles, glands and subcutaneous tissue, share in the hypertrophy. The follicles are enlarged and a tendency to increased pigmentation exists." Bogrow[4] thinks it is due to congenital tendency to furrows intensified by subsequent infection. The association of this case with acromegaly suggests a possible endocrine basis.

753 David Whitney Building.

CANCER OF STOMACH*

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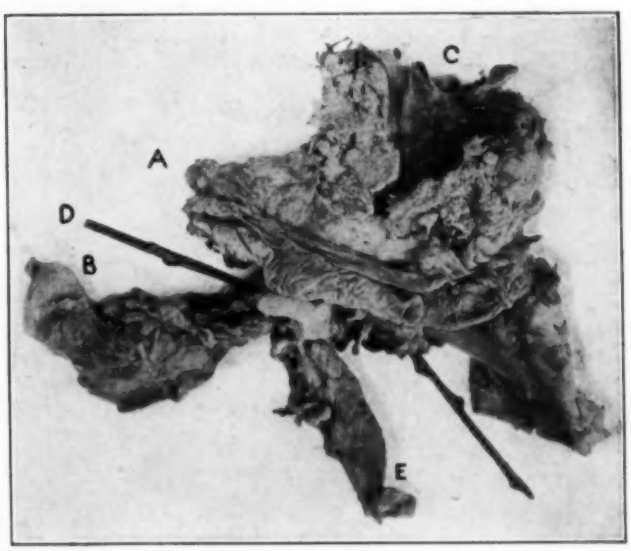
Senior Attending Physician, Los Angeles General Hospital

Seldom is the opportunity given to check up on one's colleagues as closely and accurately as this case affords. The case is worth while reporting because of the lesion, the radical operation performed seventeen years prior to death, and the ease with which all facts pertaining were assembled.

A man, aged 52, admitted in May, 1925, complained of loss of weight as a result of inability to take and assimilate food. From then until his death, November 23, repeated and detailed examinations failed to diagnose more than gastric malignancy. His history stated that part of the stomach was cut away and a new opening made by Dr. William Mayo, sixteen years previously. The patient had fair health until eight months before coming to the hospital. The roentgenogram showed a functioning gastro-enterostomy; about one third of the stomach, the cardiac end, could be seen. Hydrochloric acid was absent. Occult blood was present in the constipated stool. Anemia was so like the picture of pernicious anemia that



Stomach at necropsy: *A*, pyloric end; *B*, blind pouch of duodenum; *C*, cardiac end; *D*, twig run through to show colon; *E*, pancreas.

several of the attending physicians diagnosed it as such. The color index was 1.5. The patient died from inanition.

Necropsy by Dr. George B. Maner showed the upper half of the stomach converted into a firm nodular mass, which was

1. Jadassohn: Verhandl. d. deutsch. Dermat., IX Kong., Berne, p. 432.
2. Unna: Monatsh. f. prakt. Dermat. **45**, p. 227.
3. Stelwagon: Textbook of Skin Diseases, p. 632.
4. Bogrow: Monatsh. f. prakt. Dermat., 1910, p. 16.

* From the Department of Internal Medicine, Los Angeles General Hospital.

tightly adherent to the anterior flange of the diaphragm and impossible to separate without tearing. The pylorus had been resected and a posterior gastrojejunostomy had been done, not recently. The stomach was funnel shaped, about 12 cm. long and 7 cm. wide at the top, the enterostomy opening being the tip. The closed end of the duodenum could be demonstrated, as shown in the accompanying illustration. There was no infiltration of the pancreas, colon, spleen, lymphatics and other viscera.

The cause of death was extensive carcinoma of the cardiac end of the stomach.

A brief report, protocol and photograph sent by Dr. Mayo brought the following: ". . . The information you have given us is of value for our records. I am sorry to learn of his death, but it is gratifying at least to know that he has had sixteen years of life, following his operation here in 1908. This patient came to the Mayo Clinic, Oct. 19, 1908, and was operated on here, October 27, for a tumor, clinically malignant, of the pyloric end of the stomach, when a partial gastrectomy was done."

To sum up, this man had a pylorectomy at 33 for cancer, and died a little more than seventeen years later, well beyond the five year limit of recurrence.[1] Only during the last year of his life did he have severe symptoms. An operation resulting in artificial feedings might have prolonged his life. This he refused.

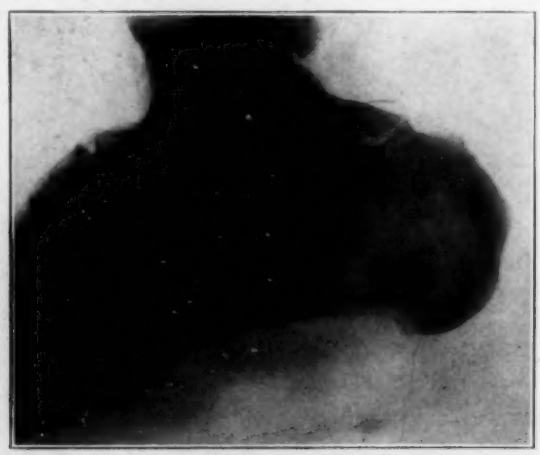
2007 Wilshire Boulevard.

UNUSUAL ARTICULATION OF THE ASTRAGALUS AND THE OS CALCIS

CHARLES E. FARR, M.D., NEW YORK

Many cases of lipping of the posterior edge of the astragalus are seen, and a few cases of an extratarsal bone are observed; but these are rare. The case here reported is unique in that it shows an extreme projection from the posterior surface of the astragalus, with a separate joint for this projection on a corresponding projection of the os calcis. Consultation with the anatomic department at Cornell University revealed no similar finding in their records.

The surgical significance of this unusual finding is obvious in that a slight trauma might easily fracture this projection and cause considerable temporary disability. I saw one such



Projection from posterior surface of astragalus, with separate joint for this projection on a corresponding projection of the os calcis.

case in consultation, but the extra articulation was not present. The posterior projection of the astragalus was almost as marked as in the case presented.

This patient was a laboring man who had received a fairly severe contusion of the foot, and the roentgenogram was taken to exclude a fracture. No fracture was found, and the case is presented for its rarity and its possible complications.

620 Park Avenue.

1. Mayo, W. J.: Surg., Gynec. & Obst. **26**: 367 (April) 1918.

MULTIPLE SACCULATIONS OF THE ESOPHAGUS*

JACOB BUCKSTEIN, M.D., NEW YORK
Consultant in Gastro-Enterology, U. S. Veterans' Bureau; Associate Roentgenologist, Bellevue Hospital; Lecturer in Gastro-Enterology, New York Polyclinic Medical School and Hospital

The case described is reported because it is the first of its kind that I have seen in the course of more than 10,000 examinations of the gastro-intestinal tract.

Multiple sacculations of the esophagus, indicated by arrows.

T. O., aged 44, complained of knifelike pain in the left upper quadrant, which occurred an hour or two after meals. The condition had lasted four months. There was no radiation, vomiting or food relief. He had lost 20 pounds (9 Kg.). Physical examination, except for tenderness in the left upper quadrant, was negative. Nothing in the clinical examination suggested an esophageal disorder.

The sacculations of the esophagus in the accompanying illustration were noted in the course of a routine roentgenographic examination of the gastro-intestinal tract. The remainder of the alimentary canal was normal.

For a number of weeks since the examination, the patient has been entirely symptom free.

The esophageal condition does not appear to have any relation to his symptoms, and may be congenital.

1 West Eighty-Fifth Street.

* From the radiographic department, Bellevue Hospital, Dr. I. S. Hirsch, director.

Need of Periodic Health Examinations.—Individuals who need a periodic health examination at regular intervals are: 1. Healthy individuals who want to keep their health. 2. Near well individuals who think they are healthy but who are uncomfortable, dissatisfied, and who sometimes suffer pain. They have bad health habits, defects or impairments which, corrected, would place them in the healthy group. 3. Individuals who think they are ill, but who are merely the victims of bad physical and mental habits. 4. Unhealthy individuals who constantly have colds, boils or abscesses. They have defects, impairments and habits which need the attention of a competent physician. 5. Ill individuals with chronic disease or impairment which, treated properly, would prolong life and usefulness for many years.—Wood, T. D., and Dansdill, T.: By-Ways to Health, 1925, p. 7.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 1008)

Essential Composition of Pills.—A pill mass consists of at least two parts: active ingredient and excipient. The active ingredient suitable for pill form is almost any solid medicine that is not deliquescent and the dose of which is small (not exceeding 1 Gm.). If the dose is higher than 0.5 Gm., two pills should be made of it. Even deliquescent substances may be prescribed if their dose is very small. Liquids can be prescribed in pill form, if the dose of the liquid does not exceed a drop.

A diluent is necessary when the dose of the active ingredient is very small, as 1 mg. of strychnine sulphate. Here the diluent (starch) is required to form pills of the proper size. Very irritant or caustic substances require a diluent in order to avoid excessive action on the stomach. Liquids and deliquescent bodies need an absorbent powder, such as kaolin. Also, a diluent is necessary if the substance is very soluble, as such pills are apt to flatten. Here, the addition of an insoluble vegetable powder to afford by its fibers and cell walls the mechanical support necessary to maintain the globular shape is advisable. One of the best diluents for this purpose is powdered glycyrrhiza. Powdered althea may be preferred, if white pills are wanted.

The excipient, or cohesive, varies with the nature of the basic ingredients. On the proper choice of the excipient depend the keeping qualities of the pills, which should be such that the pills will retain their shape, and that they neither harden nor soften, nor crumble with age. Sometimes the ingredients are rendered sufficiently adhesive by the addition of a few drops of water or of alcohol. Usually an adhesive must be used, among which glucose, extract of gentian, and glycerite of starch may be mentioned as probably the most generally useful. The physician should prescribe the excipient only when a special or unusual one is needed. Commonly, its choice may be safely left to the pharmacist. The determination of the quantity of excipient is always left to the compounder.

An instance when a special excipient is required is in case of those chemicals that are destroyed by organic substances, such as silver nitrate or potassium permanganate. For these, the usual diluent is kaolin, with petrolatum as the excipient; but these pills do not disintegrate readily. Marshall [38] proposes pills made with kaolin, 2 parts, and anhydrous sodium sulphate, 1 part, which, although very hard, disintegrate rapidly. As this method is not sufficiently well known, a brief description of it may be given here.

The powdered drug is mixed with the requisite amount of kaolin; half as much anhydrous sodium sulphate as kaolin is added and, after mixing, the whole is massed with about the same weight of water as of sodium sulphate. The mass must be kept above 33 C. until the pills are finished. When the temperature of the pills falls to that of the room, they become of stony hardness. The method depends on the fact that 33 C. is a critical temperature for sodium sulphate. Above that temperature the sodium sulphate exists in the anhydrous form; hence the water is free, and the mixture is a plastic mass. Below 33 C. the sodium sulphate exists as Na_2SO_4, $7\,H_2O$. Hence, when the temperature falls, this hydrated salt crystallizes out and the pills rapidly become hard. The pills disintegrate quickly, owing to the ready solubility of this salt in water.

The simplest subscription being best, provided it is explicit enough, the formula "Mix and divide into pills" suffices. The word mix implies the making of a mass; otherwise it could not be divided into pills. When, however, a pill mass is to be encapsulated, "Mix, make a mass, and divide into capsules" should be the subscription. Otherwise the druggist might pack the powder into the capsule, with a resulting different timing and extent of action.

The pill mass, essentially a dough, is first rolled into a ball and then into a cylinder of the proper length to yield the desired number of pills when rolled under and cut by the opposing sharp ridges of the pill machine. They are finally made into perfect little balls by being rolled in a sort of wooden cover. A dusting powder (conspergative) of lycopodium—or starch, if the pills are white—is employed to keep the pills from sticking together.

Pill Coating.—Pill coating aims to disguise the taste and improve the keeping qualities of pills. The following coatings may be used:

(*a*) Gelatin coating is the most popular and probably the best, because the most easily soluble, coating for the great majority of pills. It is obtained by dipping pills in a strong warm solution of gelatin, which is then allowed to harden in the air. This process can be well carried out only on a large scale. It is generally not necessary to specify the kind of coating, as it really makes little difference in the action and may embarrass the pharmacist, who may have the identical pill on hand with a different coating. Should, however, gelatin coating be especially desired, it is specified by writing after the name of the pills, and enclosed in parenthesis, the initials for gelatin-coated, thus: (g. c.). A prescription for gelatin-coated vegetable cathartic pills would, for instance, be written:

℞ 12 vegetable cathartic pills, N. P. (g. c.)
Label: One or two at bedtime.

A gelatin coating quite as serviceable, if not as elegant, can be given pills by any pharmacist by the use of gelatin capsules, as previously noted.

(*b*) Sugar coating is produced by moistening the pill with mucilage of acacia; then quickly transferring to a porcelain capsule containing a mixture of powdered sucrose or lactose, 8 parts, and powdered acacia, 2 parts; and rapidly rotating until they are covered with a firm, white covering. Sugar coating can be satisfactorily carried out only by the manufacturer. Sugar coating is specified by writing (s. c.) after the number of pills ordered. If the porcelain capsule in which the pills are shaken contains cacao powder instead of the sugar mixture, cacao coating is obtained.

(*c*) Tolu coating is used by the Pharmacopeia and the National Formulary to protect delicate chemicals, such as ferrous iodide of phosphorus, against change on exposure to air. Such coating is obtained by rapidly rotating the pills in a porcelain capsule containing a

* This is the fifteenth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

38. Marshall, C. R.: Manual of Prescribing, London, J. and A. Churchill, 1908, p. 187.

little of a mixture of equal volumes of tincture of tolu and ether.

(*d*) Gold or silver coating, though much less frequently employed now than formerly, before gelatin or sugar coated pills were in use, may have a field of usefulness for its psychic quality, as well as because gold or silver can be easily applied by the retail pharmacist to insure tastelessness of extemporaneously prepared pills. Detailed directions for obtaining this coating are given in the National Formulary. By this means the pills become loosely coated with bits of broken foil, which effectively conceal the taste and yet give no obstacle to the penetration of solvents.

(*e*) Enteric pills are coated with a material that is insoluble in the stomach, but soluble in the intestine. Such coatings are: (1) keratin, made from goose-quill; (2) phenyl salicylate; (3) "glutoid," gelatin hardened in formaldehyde, and (4) stearic acid coating. These coatings may be used when we desire action on the intestine alone, when the substance acts unfavorably on the stomach, or when the medicament is impaired in its action by the gastric secretion. Pills thus coated have, however, the disadvantage that it is impossible to regulate reliably the thickness of the coating and the rate of its disintegration. Hence they may not be dissolved in the intestine, and escape the body in the stools without having exerted the action expected of them. Enteric encapsulation seems preferable.

Administration of Pills.—Pills are swallowed as a whole, generally with the aid of a small quantity of fluid. Adults who think they cannot swallow pills are generally those who make the mistake of looking up while attempting to swallow. In this position, the swallowing of a bolus of food would be as difficult, if not impossible. The remedy lies in putting the pill far back on the tongue, taking a mouthful of water, and looking down while swallowing. Sometimes having the pill mixed with a little gruel seems to help in deglutition. A method that is said to succeed when others fail is to replace the seeds of a dark skinned grape with the pill, and then pop the pulp into the mouth and swallow it without chewing. All of which goes to show that it is not the size of the mass but the mental attitude toward it that is responsible for difficulty in swallowing pills or capsules.

POWDERS

Powders are finely subdivided solids or mixtures of solids. Their prescribing should be restricted to (*a*) comparatively insoluble, nondeliquescent drugs of inoffensive taste, such as bismuth subnitrate, magnesium oxide, calcium carbonate and sodium bicarbonate, and to (*b*) drugs, even though soluble, whose dosage is too bulky to be prescribed in capsules, chachets or solution, as the saline cathartics. Even soft or liquid substances may be prescribed in powder form, provided their dose is so small that it can be incorporated in a reasonable quantity of absorbing powder. Caustic or very irritant substances should not be given in this form, unless largely diluted with some inert powder, or unless the powder is dissolved in a liberal quantity of water before taking. A diluent is also necessary when the dose of the medicament is very small, as in the case of mild mercurous chloride, for otherwise the patient might not be able to find the dose. Enough diluent is added to make each powder weigh 0.3 Gm. Diluents available for these purposes are sugar of milk, cane sugar, oil sugars, powdered starch (which permits incorporation of at least 10 per cent of its weight of liquid) and powdered glycyrrhiza.

Unsuitable for administration in powder form are drugs and drug mixtures unstable in the air, such as:

(*a*) Deliquescent or hygroscopic bodies. Deliquescent are potassium acetate and carbonate; sodium iodide and nitrite; the halogen salts (chloride, bromide, iodide) of the alkaline earth metals (calcium, strontium, magnesium, lithium), of iron, zinc, manganese and gold; phenol, chromium trioxide, pilocarpine hydrochloride, and hyoscyamine hydrobromide. Hygroscopic are chlorinated lime, and scale preparations of iron and of pepsin.

(*b*) Liquefying mixtures: the phenols (phenol, thymol, resorcinol, camphor, menthol, phenyl salicylate). Acetanilid, acetphenetidin and antipyrine also liquefy with some of these; so do lead acetate and sodium phosphate.

(*c*) Volatile bodies and those compounds that are liable to decompose on exposure to air, as lead acetate and morphine acetate, which gradually lose acetic acid.

(d) Explosive mixtures; combinations of oxidizing and reducing agents, as potassium chlorate and sulphur.

The Pharmacopeia recognizes the following cathartic powder mixtures, mentioned in approximately descending order of practical importance:

1. Compound effervescing powder (seidlitz powder), containing sodium bicarbonate, 2.5 Gm.; sodium and potassium tartrate, 7.5 Gm., in blue powder paper; tartaric acid, 2.15 Gm., in white powder paper. The two powders are mixed with a half tumblerful of water before taking.

2. Compound powder of glycyrrhiza (compound licorice powder), containing: senna, 18 Gm.; glycyrrhiza, 24 Gm.; washed sulphur, 8 Gm.; oil of fennel, 0.4 Gm.; sucrose, 50 Gm. Average dose, 4 Gm.

3. Compound powder of jalap, containing: jalap, 35 Gm.; potassium bitartrate, 65 Gm. Average dose, 2 Gm.

4. Compound powder of rhubarb, containing: rhubarb, 25 Gm.; magnesium oxide, 65 Gm.; ginger, 10 Gm. Average dose, 2 Gm.

There is also in the Pharmacopeia the following formula for an analgesic diaphoretic which was popular before the days of the coal tar analgesics for the relief of the aches and pains of fever patients:

Powder of ipecac and opium (Dover's powder), containing: ipecac, 10 Gm.; opium, 10 Gm.; lactose, 80 Gm. Average dose, 0.3 Gm.

Dispensing of Powders.—Powders may be dispensed in bulk, or in divided doses.

When the dose of a powder exceeds 1 or 2 Gm., especially if its weight need not be very exact, it is best prescribed in bulk, the dose being measured, when wanted, with a teaspoon or in any other appropriate way. For the purpose of approximating dosage, it may be assumed that a heaped teaspoonful contains from 1 to 2 Gm. of a light powder; 2 to 4 Gm. of a moderately heavy, and 4 to 8 Gm. of a heavy powder. If level full, it contains only about half as much. Powders in bulk may be sent to the patient in a paper box or in a wide-mouthed bottle; the latter should always be selected, if the powder is liable to be altered by free access of air. The subscription would therefore either be "Dispense in a box," or "Dispense in a bottle," according to the permanence of the powder. Compound powder of glycyrrhiza is generally dispensed in a box. The effervescing salts should always be dispensed in a bottle.

Powders must be dispensed in divided doses whenever accuracy in dosing is necessary. This is the case with compound jalap powder and Dover's powder.

Each dose is then folded by the pharmacist in a powder paper. The dose accommodated by these may be quite large.

If the powders contain a volatile or a deliquescent substance, they must be wrapped in waxed paper, which may be specified in the subscription "Dispense in waxed papers." It is better, however, to avoid if possible prescribing such substances in powder form.

The patient may be directed to take the powder in water, milk or syrup, or he may place the dry powder on the tongue and swallow it with a mouthful of water. Insoluble bodies like bismuth subnitrate or chalk should always be stirred with water until all lumps have disappeared, as otherwise the formation of enteroliths is believed to be more likely. Powders are most conveniently administered to infants by dipping the moistened clean finger into the powder and spreading it over the infant's tongue.

The following special varieties of powders might be worthy of note:

Triturations (triturates): These are powders obtained by rubbing the active substance with some inert material, such as sugar of milk. Their advantage lies in the greater convenience of weighing a comparatively large amount of substance. Furthermore, the rubbing to a very fine powder increases somewhat the activity of sparingly soluble substances by exposing a greater surface to the solvent. Sparingly soluble, potent drugs are often best dispensed in this form. The Pharmacopeia contains a general formula for triturations, which is to be used by the pharmacist, unless he is otherwise directed:

The substance	10 Gm.
Lactose, in moderately fine powder	90 Gm.
To make	100 Gm.

The substance and the sugar of milk are weighed separately; then the substance, previously reduced, if necessary, to a moderately fine powder, is placed in a mortar, about an equal measure of lactose is added, well mixed by means of a spatula, and triturated thoroughly together. Then fresh portions of the lactose are added, from time to time until the whole has been incorporated, and trituration is continued until the substance is intimately mixed with the lactose and reduced to a fine powder.

Perhaps the best example of the use of a trituration is in the prescribing of elaterin, the dose of which is so small (0.003 Gm.) that the addition of lactose is required to divide the substance into powders of suitable size. In prescribing a hydragogue cathartic for dropsy, we might add to the trituration of elaterin 0.02 Gm. of extract of hyoscyamus per dose to antagonize griping. One powder might be taken on alternate mornings.

Mild mercurous chloride is likewise often prescribed as a triturate, for calomel is so heavy and the quantity usually employed so small that, without the addition of lactose, the patient might not be able to find his dose.

Oil Sugars: Oil sugars are mixtures of volatile oils with powdered sucrose. The National Formulary contains a general formula for these: any volatile oil 1 drop; sucrose, 2 Gm. The sugar is triturated with the volatile oil until they are intimately mixed. Thus oil sugar of anise or of peppermint is prepared from the corresponding volatile oil, according to this formula. They should be freshly made, when wanted. They are used mainly as pleasant diluents for powders.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

MEAD'S POWDERED LACTIC ACID MILK (CULTURED).—A modified milk product prepared by fermenting whole milk with *B. acidi-lactici*, drying, and powdering. Each 100 Gm. contains approximately protein 29 Gm.; carbohydrates, 26.4 Gm.; fat, 28.8 Gm.; free lactic acid, 3 Gm., and ash, 6 Gm.

Actions and Uses.—Mead's powdered lactic acid milk (cultured) is proposed for overcoming the so-called buffer action of cow's milk in the infant's stomach. The nutritive value of 500 Gm. corresponds approximately to 2,450 calories.

Dosage.—For use, Mead's powdered lactic acid milk (cultured) is mixed with warm water in quantities as prescribed by the physician. A smooth thin paste is made by adding a small amount of water to the dry powder; then the remainder of the water is added, and the resulting product bottled and kept on ice.

When prepared for use in proportion of one part solids to seven parts water, Mead's powdered lactic acid milk (cultured) contains approximately fat, 3.6 per cent; carbohydrates, 3.3 per cent.; protein, 3.6 per cent, and ash, 0.75 per cent. The nutritive value of 500 Gm. is approximately 319.2 calories.

Manufactured by Mead Johnson & Co., Evansville, Ind. No U. S. patent or trademark.

MEAD'S POWDERED LACTIC ACID MILK (ACIDIFIED WITH LACTIC ACID U. S. P.).—A modified milk product prepared by adding lactic acid U. S. P. to whole milk, drying and powdering. Each 100 Gm. contains approximately protein, 26.4 Gm.; carbohydrates, 34 Gm.; free lactic acid, 3 Gm.; fat, 24 Gm., and ash, 6 Gm.

Actions and Uses.—Mead's powdered lactic acid milk (acidified with lactic acid U. S. P.) is proposed for overcoming the so-called buffer action of cow's milk in the infant's stomach. The nutritive value of 500 Gm. of the dry powder corresponds approximately to 2,345 calories.

Dosage.—For use, Mead's powdered lactic acid milk (acidified with lactic acid U. S. P.) is mixed with warm water in quantities as prescribed by the physician. A smooth thin paste is made by adding a small amount of water to the dry powder, then the remainder of the water is added and the resulting product bottled and kept on ice.

When prepared for use in proportion of one part solids to seven parts water, Mead's powdered lactic acid milk (acidified with lactic acid U. S. P.) contains approximately fat, 3 per cent; carbohydrates, 4.2 per cent; protein, 3.3 per cent, and ash, 0.75 per cent. The nutritive value of 500 Gm. corresponds approximately to 335 calories.

Manufactured by Mead Johnson & Co., Evansville, Ind. No U. S. patent or trademark.

POLLEN EXTRACTS-MULFORD (See New and Nonofficial Remedies, 1925, p. 285; THE JOURNAL, June 6, 1925, p. 1734).

Lamb's Quarters Pollen Extract-Mulford; Ragweed Pollen Extract (Fall)-Mulford; Timothy Pollen Extract (Spring)-Mulford; Wormwood Pollen Extract-Mulford. Also marketed as:

Fourth Series: Five glass syringes (doses 16 to 20, inclusive), each containing 1,000 protein units.

CONCENTRATED POLLEN EXTRACTS-SWAN-MYERS (See THE JOURNAL, May 30, 1925, p. 1634; Jan. 23, 1926, p. 277; Feb. 27, 1926, p. 625).

These products are also marketed in 2 cc. vials and in sets of five capillary tubes for diagnostic tests, each tube containing sufficient extract for one test.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN (See THE JOURNAL, May 2, 1925, p. 1338).

E. R. Squibb & Sons, New York.

Scarlet Fever Streptococcus Antitoxin Concentrated (See THE JOURNAL, Jan. 16, 1926, p. 199).—Also marketed in packages of 1 cc. vials (for the diagnostic blanching test) containing sufficient scarlet fever antitoxin for ten blanching tests.

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SATURDAY, APRIL 10, 1926

A CRITICISM OF MODERN MEDICINE

A conscientious reviewer of the history of medicine would probably admit that within the last century, and largely within half that period, medical science and art have advanced with a speed incomparably greater than at any previous time. Philosophical speculation has given way to experimentation as medicine has kept pace with the advancement of science in general. It would be as ungracious as it is unjust to deny the great advance of medical knowledge along with the evolution of culture; and medicine can proudly boast of many conquests that deserve to be called marvelous.

Synge[1] has urged that it is often more useful to criticize than to applaud, because without dissatisfaction, without criticism, progress is impossible. To be content is to cease to advance. Synge has therefore frankly presented a series of cogent criticisms and comments, some of which seem worth repeating at a time when the needs, the shortcomings, the failures and the misdirections of medical training are being investigated vigorously in several quarters. There can be no offense in any effort to promote an advance, particularly since, despite medical progress, the incidence of all diseases is not decreasing; in fact, the incidence of some diseases is markedly increasing. Like many writers in this country, Synge stresses the belief that the tendency of modern diagnosis is to neglect the evidence furnished by signs and symptoms, and to place undue reliance on special tests. Thus, we are told bluntly that the roentgen ray, by simplifying diagnosis, has made clinicians lazy. "The science of errors is, unfortunately, a neglected branch of study." This statement embodies an appreciation of the readiness of present-day student and practitioner alike to accept so-called evidence at face value and without adequate discussion. Thus, some serologic reactions are frankly misleading. We are, in Synge's judgment, too ready to apply unfinished biochemical researches to clinical purposes. A discovery is heralded, and straightway it is applied to purposes of diagnosis or treatment regardless of possible limitations or fallacies. "The methods fail; the biochemist gets the abuse." Biochemists and clinicians do not collaborate sufficiently.

It sounds like a platitude, yet one welcomed by the "practical doctor," to hear that observation, experience and sound judgment are more important in clinical medicine than are measurements with delicate instruments. We have often maintained that the use of helpful material devices is not incompatible with the exercise of sane judgment. Even the most "hard headed" physician usually finds a watch helpful in estimating the behavior of the heart. We find somewhat greater sympathy with Synge's animadversions at the spread of certain fashions and foibles. Vaccines become a panacea, and every conceivable disease is treated with them. Drugs must now be given hypodermically or intravenously instead of by mouth, because a few drugs have been found to be more efficacious when so given. And, with the age of endocrinology, prosperity has come to new forms of pseudoscience.

Synge alleges, with much justification, that the belief in the magical and the irrational has increased because the critical faculty has been dulled by so many new wonders. The pessimist will be inspired by the assertion that belief in everything is followed by belief in nothing; credulity is succeeded by skepticism; skepticism by cynicism; cynicism makes no effort, knowledge declines. Is it not better to share the more optimistic outlook of Synge in this admonition:

Hard and conscientious work, accurate observation, sound reasoning, a mind free from obsessions and superstitions, a firm belief in the possibilities of medicine as an art and as a science; these are the things which have raised medicine to its present greatness; these are the things which will carry it onward, always.

1. Synge, V. M.: A Criticism of Modern Medicine, Irish J. M. Sc. 6: 20 (Jan.) 1926.

ACRODYNIA, ERYTHREDEMA OR SWIFT'S DISEASE?

It was once an almost universal custom to associate a newly recognized disease entity with the name of the investigator, usually a clinician, who first published an accurate description of it. Thus, to give only a few conspicuous illustrations, physicians still speak of Bright's disease, Pott's disease, Basedow's disease, Barlow's disease and Paget's disease. Obviously, a step in advance occurs when any malady can be more accurately designated as a demonstrable lesion of some organ, a definite perversion of some function, or a bacterial invasion of certain tissues. Interstitial nephritis, hyperthyroidism, and tuberculosis of the spine have direct implications of a more scientific character. So long as a disease designation can be based on a definite, clear cut, pathogenic feature, the corresponding name is likely to represent a distinct advantage. Often the nomenclature refers merely to a conspicuous symptom. Eczema and "pink disease" represent instances of the

undesirability of the designations. Symptoms are all too often common to more than one systemic disorder and consequently do not have a uniform ultimate cause.

The history of the confusion and actual harm arising from this more modern practice of employing supposedly "scientific" technical language has been exemplified in the discussions of a recently well recognized pathologic entity of infancy and early childhood. The clinical syndrome consists of three groups of symptoms, nutritional, nervous and cutaneous, occurring in infancy and early childhood, such as loss of weight and appetite, weakness, extreme irritability, sleeplessness, paresthesias, loss of reflexes, photophobia, paresis, erythema, swelling, cyanosis, coldness of hands and feet, high blood pressure, excessive perspiration, miliaria, desquamation, loss of hair and loss of teeth. Recently it has been designated occasionally under the name acrodynia, a term referring to the painful extremities. This obviously describes one of the most typical symptoms of the complex, although it gives no indications of the nutritional or neurologic involvements in the causation. Another recent designation is erythredema, a term likewise applying to a prominent clinical feature seen in the pink hands and feet.

Recently it was pointed out [1] that the disease here referred to is by no means uncommon. Australia, England, Netherlands, Scotland, New Zealand, Sweden and Switzerland have furnished patients in addition to those of American pediatricians. At least 230 cases are thus recorded for consideration. Warthin [2] has referred to all the current designations as unfortunate and misleading. His own necropsy studies indicate, for example, that the expression erythredema is not universally justifiable in this connection, for his histologic observations at the University of Michigan failed to disclose any edema of the corium. They do not present any evidence as to a specific infectious etiology; they likewise show no relationship between tonsillar disease and the syndrome, in contrast with Rodda's [3] indications. Two cases, representing Warthin's important contribution, are too few to permit broad generalization. The changes in the skin and central nervous system suggested to him at once the pathology of the early erythema stage of pellagra. The changes in the skin are also identical with those seen in certain forms of light sensitization, xeroderma and fagopyrism, as well as with certain stages of roentgen-ray and ultraviolet ray erythemas. The entire anatomic picture in the two cases suggests either a food deficiency or a toxic state acting on persons of the hypoplastic constitution, affecting the reticulo-endothelial system of meninges and skin, also the vegetative nervous system, and possibly leading to a light sensitization. With an important subject thus clearly remaining *sub judice*, Warthin proposes that, pending more adequate investigation and conclusive evidence of etiology, it would be better to call the condition Swift's disease than to designate it by terms that apply so little to it as do "acrodynia" or "erythredema." This reference is in deference to the circumstance that Swift, in 1914, under the clinical designation of erythredema, reported at the Australian Medical Congress fourteen cases presenting the now familiar clinical picture of red hands and feet occurring in infants and young children.

1. Is Acrodynia a New Disease? editorial, J. A. M. A. **85**: 1225 (Oct. 17) 1925.
2. Warthin, A. S.: So-Called Acrodynia or Erythredema (Swift's Disease), Arch. Pathol. **1**: 64 (Jan.) 1926.
3. Rodda, F. C.: Acrodynia: A Clinical Study of Seventeen Cases, Am. J. Dis. Child. **30**: 224 (Aug.) 1925.

INVESTIGATION ON STREAM POLLUTION

Increasing density of population brings with it one penalty that cannot be escaped, an increase in the amount of waste from human bodies which must somehow be permanently removed. One of the simplest methods of sewage disposal is to turn the sewage into some body of water so large that oxidation processes may go on and a nuisance be avoided. This practice was long fraught with disastrous consequences to drinking water supplies, and in the generation before methods of water filtration and chlorination were worked out and applied, typhoid and kindred diseases ran riot. Although water-borne typhoid in this country is now largely a thing of the past, there are signs that the pollution of many streams is again approaching a danger point.

When the pollution of streams reaches a certain stage, it becomes more difficult and in some cases impossible to utilize the water for domestic use. There is no need to set up an impracticable ideal. The fact that nearly every body of surface water large enough to serve as a source of water supply is more or less contaminated must be faced. If the water does not receive city sewage, it is well-nigh certain to receive the drainage from small towns and villages or from isolated farmhouses. Even in remote districts, as experience has shown, the streams are exposed to occasional contamination by camping parties or chance wayfarers. The running streams of this country are not now in a safe condition to use as sources of water supply without some sort of purifying treatment. The same is true in greater or less degree of most ponds and lakes.

While our present methods of water purification are in most instances quite adequate, they should not be expected to effect the impossible. Sooner or later the increase of pollution may place a burden on the purification process that cannot be successfully met. When that time comes, "accidents" to the water supplies will become increasingly frequent and the menace of water-borne diseases will again hang over us. There are signs that in some localities this period may not be remote.

With this situation in mind, the U. S. Public Health Service about twelve years ago inaugurated a study of stream pollution. Under wise guidance the investigations have included not only the nature and degree of the pollution, but the proper criteria of water purity and water purification, the complex and highly important phenomena of natural purification, and the efficiency of filter plants in dealing with water overloaded with sewage. Many technical papers dealing with various phases of the work have been published, and a general review has recently appeared.[1] The comprehensive studies on the Ohio River especially have demonstrated in a convincing way the great extent to which we must depend on processes of natural purification for safeguarding our water supplies. It was shown twenty-five years ago, during studies on the Chicago Drainage Canal, that the sewage bacteria decreased at orderly rates as the time from the point of initial contamination increased, and that these rates were affected by seasonal influences. These results have been amply confirmed by the recent work of the Public Health Service on the Ohio and Illinois Rivers. The factors that cause this reduction, however, are still not clearly understood. Among the interesting suggestions made is that one, if not the most significant, agency is the activity of the plankton animals in destroying bacteria.[2] It is evident that an important task before workers in this field is the determination of the factors governing natural purification in order that this process may be taken advantage of to the fullest extent.

Water filters and other devices for large-scale purification cannot be relied on to convert highly polluted streams into good drinking water. Apart from esthetic considerations, there is a limit to what can reasonably be demanded from any filter plant or chlorination apparatus. Since in spite of these limitations stream pollution tends to increase with increasing urban growth, there are two main possibilities: either artificial sewage treatment must be practiced on a larger and more expensive scale, or the processes of natural purification, as exemplified in storage, must be utilized in increasing degree. Something can probably be done to enhance the effectiveness of artificial methods of water purification, but the sudden and extreme variations that occur in the "load" when pollution is extreme constitute a serious difficulty. All in all, the questions of water standards, of the reliability, adaptability and limitations of purification processes set to deal with varying loads, and of the laws of the self-purification of polluted streams form a group of problems the importance of which to sanitary science can hardly be overestimated. It is to be hoped that the series of studies conducted with such signal success by the representatives of the Public Health Service will be continued and, where desirable, extended.

1. Frost, W. H.: Pub. Health Rep. **41**: 75 (Jan. 15) 1926.
2. Purdy, W. C., and Butterfield, C. T.: Am. J. Pub. Health **8**: 499 (July) 1918.

Current Comment

RENAL VASOCONSTRICTION AND ALBUMINURIA

Complete interruption of the arterial flow in the kidney for a short time is followed by albuminuria. The glomerulus of the kidney has been demonstrated to be one, at least, of the structures through which escape of protein into the urine may take place when the renal circulation is interfered with. Recent studies, notably those of Richards of Philadelphia and his co-workers, have demonstrated an unsuspected intermittence of blood flow in some of the glomeruli, so that the circulatory activity of one is independent of others. This is analogous to what Krogh of Copenhagen described with respect to the behavior of capillaries in muscle tissue. Like the latter, apparently the glomeruli do not all ordinarily receive blood simultaneously. In his Harvey Society Lecture of 1921 on kidney function, Richards[1] remarked that if intermittence of glomerular flow is a normal phenomenon, it would appear that albuminuria might occur if, for any reason, the duration of the normal intermittent cessation of flow increased. How well this conjecture was warranted is indicated by Starr's[2] observations at the University of Pennsylvania. In animals, agents causing renal vasoconstriction were found to cause a transient albuminuria. In man, the same manifestation followed the use of the drug ephedrine, which is not intrinsically injurious to the kidney and which has been demonstrated to produce renal vasoconstriction. Albuminuria failed to appear in those cases in which signs of circulatory change were lacking. According to Starr, the observed facts may be explained by the conception that renal vasoconstriction causes increase in the duration and extent of the normal intermittent interruptions in the glomerular circulation. Permeability of the glomerular membranes is so increased by these interruptions that, when blood flow is reestablished, albumin escapes. Such an interpretation of what has been termed non-nephritic albuminurias may be applicable to a variety of conditions seen in man. The fundamental feature is not the mere diminution in the rate of blood flow that was once held responsible for the phenomena, but rather the intermittent interruptions in blood flow through the glomeruli, the duration of which is greater than can be borne by the glomerular membranes without asphyxial alteration in their permeability. As Starr has pointed out, this may apply to the albuminurias that result from excessive muscular exercise or emotion or that are produced reflexly. It may play a part in the explanation of the albuminuria that occurs after anesthesia or in cardiac decompensation; and it may represent a reason for the occasional occurrence of protein in the urine of the healthy. There are many ways in which the sequence of renal vasoconstriction, anemia, localized tissue asphyxia, and escape of albu-

1. Richards, A. N.: Kidney Function, the Harvey Lectures, 1920-1921, Philadelphia, J. B. Lippincott Company.
2. Purdy, W. C., and Butterfield, C. T.: Am. J. Pub. Health **8**: 499 constriction in Animals and Man, J. Exper. Med. **43**: 31 (Jan.) 1926.

min may be conceived to arise independent of any frank disease of the kidney parenchyma. These experiments, as Starr points out, provide a reason for anticipating the appearance of protein in the urine whenever profuse urine secretion is reestablished after a period of relative or complete suppression as the result of constriction of vessels of the kidney.

CONVICTED DIRECTOR OF EDUCATION NOW SEEKS HIGHER OFFICE

Reports indicate that William H. H. Miller, who in 1921-1922 was director of registration and education of Illinois, is now aspiring for the office of congressman-at-large. In his former position he became involved in a scandal because of a traffic that was being carried on in state licenses for physicians and pharmacists,[1] and was indicted by a Cook County grand jury and thrown out of office.[2] The bill returned by the grand jury named not only William H. H. Miller but also K. A. Fries and Dr. N. Odeon Bourque. K. A. Fries, employed in the department, was said to be Miller's son-in-law. Dr. N. Odeon Bourque was then prominently connected with the Chicago Medical School, a class C institution, in Chicago, and was conducting a quiz class in which he openly guaranteed that questions presented to the class would include a high percentage of the questions actually asked by the state board—a claim supported by a comparison of the questions. In the trial, July 21, 1922, Miller was declared guilty of conspiracy and was fined $1,000, which was paid in open court two days later.[3] Miller now has the presumption to seek nomination as congressman-at-large from Illinois. The people of Illinois may judge whether his record warrants their support of his candidacy to represent them in Congress.

ARCHIVES OF DISEASE IN CHILDHOOD

When the Board of Trustees began the publication of the *Archives of Internal Medicine* in 1908, few physicians anticipated the progress that the American Medical Association would make in the publication of special periodicals. Today, special journals in internal medicine, diseases of children, diseases of the skin, neurology and psychiatry, surgery, otolaryngology and pathology testify to the worthiness of the work. Every physician practicing in these specialties is ready to admit that the publication of these periodicals has done as much perhaps as any other factor in advancing progress in the fields they cover. A new and significant recognition of the place made by these publications is the fact that the British Medical Association has just issued what will probably be the first of special journals which it proposes to publish. In an introductory statement, Sir Thomas Barlow indicates the value of such a periodical to the progress of science, pointing out many problems in the diseases of children which demand investigation, and the necessity for bringing together the conclusions obtained by various workers, giving them at the same time opportunity to present their work. The first number of the British periodical is excellently printed on coated paper, and the articles are handsomely illustrated, with some of the pictures in color. The contents are limited to original contributions in the field of pediatrics. The editors selected by the British Medical Association are Hugh Thursfield and Reginald Miller, and there is a consulting staff, including seven other leading specialists in the diseases of children, and the editor of the *British Medical Journal*. It is well that English periodical literature should have another distinguished representative of the type of the *Archives of Disease in Childhood*.

1. Licensure Investigation in Illinois, J. A. M. A. **78**: 979 (April 1) 1922.
2. Medical Licensure in Illinois, Current Comment, J. A. M. A. **79**: 306 (July 22) 1922; Governor Dismisses Miller, ibid. **79**: 665 (Aug. 19) 1922.
3. Indictment no. 29033, People of State of Illinois v. William H. H. Miller, N. Odeon Bourque, K. A. Fries and William Broniarzik.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Held in Chicago, Feb. 15, 16, 17 and 18, 1926

(Continued from page 1078)

FEBRUARY 17—AFTERNOON

Medical Legislation in Connecticut

DR. ROBERT LEE ROWLEY, Hartford, Conn.: The investigation started by the public press in the "home town" of one of the diploma mills, and how the emissary came and told our governor of some of the startling discoveries made, and the prompt action taken by the governor, are matters of recent history. In our state there had been indications—noted by some—that all was not well, and when this was brought to the attention of the state medical society four of its members were delegated to lay the situation as it then appeared before state authorities. That was done just about one year before any action or investigation on the part of the state was undertaken. To the Council on Medical Education and Hospitals is due the credit for having been apparently the first to recognize the fact that graduates of low grade medical schools were coming in increasing numbers to one of the examining boards in our state, where they seemed to experience little if any difficulty in meeting the requirements that enabled them to obtain licenses. The investigation in Connecticut resulted in the cancelation of about 168 licenses to practice. Nearly three fourths of the persons holding those licenses resided outside Connecticut. Appeals were made in about sixty cases against the decision for cancelation of licenses. These cases are still in the courts, and, pending final decision on the appeals, those persons may continue to practice, according to a ruling of the attorney general. At the session of the state legislature, a year ago, bills were introduced for the restoration of licenses in about fifty of the cases. All those bills were defeated.

The state chamber of commerce prepared a bill that became the ground work of the bill that was finally approved and presented to the legislature by the grand jury. Perhaps the most important feature of the so-called grand jury bill was the one that provided for one examining board with one standard for all applicants for licensure to practice in any branch of the healing art. The fairness of purpose of the sponsors of that bill is illustrated by the provision that the examination shall be so conducted as not to discriminate against the views of any bona fide organization, sect or school, as to remedies or treatment or any system of therapeutics. The grand jury bill was defeated; instead of the six examining boards being replaced by one board, we now have in Connecticut seven examining boards. This seems absurd, but, as a matter of fact, an important step in the right direction has been taken. The state board of healing arts came into being, July 1, 1925. Under the terms of this law the governor appoints the three members of the board, one of whom is to serve for two years,

one for four years and one for six years. No one can be appointed to the board who has received a degree in any of the healing arts, or who is a trustee, director, officer or employee of any hospital. The new law provides that every person desiring "to take an examination" to be admitted to practice any branch of the healing art must show by written examination by this board that he has a comprehensive knowledge of anatomy, physiology, hygiene, pathology and diagnosis. To be admitted to the examinations, he must satisfy the board that he is a person of good moral character and that he was a graduate of a high school or possessed equivalent educational qualifications before he began the study of the healing art. The board conceives its function as a board of elimination, a coarse seive through which applicants for a license to practice the healing art must first pass, with consequent elimination of the obviously unfit. The new law provides that a certificate from the state board of healing arts is prerequisite to examination by the Connecticut medical examining board, the Connecticut homeopathic medical examining board, the Connecticut eclectic medical examining board, the state board of osteopathic registration and examination, the state board of chiropractic examiners, or the state board of naturopathic examiners. It is too early to say whether or not any significance attaches to the fact that thus far, with I believe one exception, all the applicants before the board of healing arts have been graduates of regular schools of medicine. One would have supposed that a number of graduates of other schools would have appeared for examination before this time. It may be that the high school education requirement is a little too much of a hurdle for some.

Fraudulent Medical Diplomas, and How Some Holders Secured Licenses

FREDERICK C. WAITE, PH.D., Cleveland: It is only the choice, the valuable, the desirable things that are counterfeited. With the great improvement in medical education in the twenty-five years just past, the genuine medical diploma has come to be in the public mind one of the most highly prized professional hall marks of our modern life. It is no wonder that a market for fraudulent medical diplomas has arisen and develops into a commercial enterprise. In one of the states in which were two of the principle foci of these activities, it has been my privilege to work with the public authorities in the study of the methods and results of the short cut into the medical profession through fraudulent diplomas. From such a consideration emerge certain principles which should be written into the creed of each licensing board. There is no justification in accepting a graduate of a deficient school. Every board should possess itself of frequently corrected knowledge of the educational efficiency of all those schools whose graduates commonly appear before it. In the case of the schools in its own state, that knowledge should be intimate. Graduates of little known schools or of schools of foreign countries should be denied admission to examination until authentic information is secured. Every board should have accessible data from which it can advise boards of other states as to intimate details of all schools within its own state, either now or previously existing. A postgraduate or ad eundem or duplicate degree should not be accepted as evidence of proficiency except after careful inquiry. No honorary degree should be accepted as giving evidence of proficiency. The recommendations as to personal worth and moral character should be investigated to ascertain just how much each sponsor knows about the candidate and also as to the professional standing of the sponsors themselves and the worth of their judgment. The authenticity of statements as to preliminary education should be directly investigated, and it should be insisted that this education shall have been completed before the professional course was begun. Preliminary education authenticated by examination to establish an equivalent should immediately create suspicion. Application blanks should be revised in various respects, especially to establish scholastic accomplishment instead of mere record of time service through attendance. Applications for license should be postponed or refused when presented too late to permit thorough investigation. No one expects that the end of fraudulent medical diplomas has arrived. The orgy of the last few years would have been improbable had the statutes of the various states been adequate; and, were the present statutes sufficient, each participant could be commensurately punished. Now, while the danger is in the public mind, is the proper time to prepare for the next crop of diploma mill products. It is the duty of each state board to cooperate in, and inaugurate, if necessary, the endeavor to secure in its own state legislation making it a felony to participate in the issuance, selling or receipt of an unearned diploma of medicine or of any other profession that relates to public health.

Revocation of License

DR. K. P. B. BONNER, Morehead City, N. C.: The unworthy licentiate is a menace to the public, a discredit to the profession and a reflection on the licensing board. The agency vested with the power of licensing should have the power of unlicensing where necessary. Habitual imtemperance, convictions in court of crimes involving moral turpitude, criminal abortion, fraud and unprofessional conduct are generally accepted among the states as sufficient grounds on which a license may be withdrawn. These are named in the order of their popularity, and are specifically incorporated in the laws of thirty-eight, thirty-five, thirty and twenty-seven states, respectively. Demoralizing and deceptive advertising and gross immorality are less generally recognized as causes. Many states have set up in the statutes obviously just causes for revocation of license, but have made the enforcement of the law almost impossible by the insertion of a useless qualifying clause. It is surprising how limited are the causes for action in some states. Two states have no provisions of law permitting a license to be revoked. Direct correspondence with these boards reveals that licenses are revoked in each of these states. It would be interesting to know how the courts would view such procedure on appeal from the decisions of these boards. The section permitting withdrawal of license should be brief, but at the same time should cover every phase of misconduct. As far as possible, the board should have wide discretionary powers, and it should be made clear that such powers were vested in it. If too many qualifying clauses are inserted, it is possible that the primary object of the law will be defeated. The necessary machinery should be set up legally providing for the conduct of hearings, and investing the board with the power to issue summonses and to administer oaths. Above everything else, the power to revoke a license should be vested in the board. The law should provide, in cases of guilt, for degrees of punishment. With such discretionary powers, there is no necessity of making provision for future restoration of license.

Annual Registration of Physicians: Reregistration in Iowa

DR. DON M. GRISWOLD, Des Moines, Iowa: In 1906 there were about 5,000 persons practicing medicine in the state of Iowa, as nearly as can be estimated. Shortly after this date the work of the committee of medical education of the American Medical Association began to be felt. The supply of poorly trained physicians was being shut off at its source. It can be said with truth and justice and should be proclaimed from the housetops that the medical profession has "cleaned its own kitchen." As a result of the tireless and unceasing work of its board members, who were guided and directed by the Council on Medical Education of the American Medical Association, this important work has been done. The barriers at the front door of our profession are sufficiently high and sufficiently strong to withstand any assault. This state of affairs gives us time to look about for the other avenues of entrance than the "front door." Every fraudulently used license that is not meaningless or an outright forgery has been issued honestly to some one. These licenses that have no termination go on serving a purpose for some fraud, years after the man who earned it was sleeping in his grave. The license of a dead physician may be innocently sold as part of the assets of an estate. To frustrate this entrance from the "side door," several states, including Iowa, require an annual reregistration of the license to practice medicine. The holder of each license is addressed annually and asked whether he wishes to use his license during the coming year. If he does, he pins his check for one dollar to the enclosed card

and returns it to the office of the board. If the licensee has died, retired, moved away or for any other reason does not receive the notice, the postmaster, family or friends notify the board and proper record is made of the fact.

DISCUSSION

DR. T. J. CROWE, Dallas, Texas: Men are going about the country, or were, using old diplomas and using old license certificates, simply taking out the name and inserting the name of another man, many of whom had been dead twenty years. Texas has tried to overcome that thing by issuing its license certificate on bank note paper, so that it cannot be changed or erased without detection. Dr. Waite's work, I think, was well done, but I think he made rather a doubtful use of it in publishing to the world that the state boards of this country are of doubtful caliber.

DR. JAMES STEWART, Jefferson City, Mo.: Dr. Waite's paper was one of the most interesting papers that I have heard. I have heard a lot about diploma mills. I want to add one more mill, and that is the state certificate mill. I want to ask you how can all of these men who have graduated from these inferior schools and from schools of no standing whatsoever, without any premedical education, come before state boards of health and get state certificates to practice medicine? There have been numbers of men in Missouri, and I guess elsewhere, who have paid all the way from $250 to $2,800 for state certificates to practice medicine.

DR. DAVID STRICKLER, Denver: I think it is very desirable that the annual registration should be carried out in Colorado. We have no data in our office to tell how many of these frauds are in the state at the present time. I should like to know whether in annual registration returns you simply give the name and address of the physician or whether you give any information as to the school he graduated from and when. The conditions on which he was licensed, it seems to me, would be good information.

DR. HENRY W. BRIGGS, Wilmington, Del.: The function of a state examining board is just as much to look after the men after they have been licensed as to license them, and, if necessary, to take their license away from them when they become unworthy. In the matter of interstate endorsement: If a man comes from a state the standard of which is equal to our own, and comes with proper training, premedical and medical; if he has had one year's internship in an accredited hospital, and has the recommendation of his own state board, signed by one of the officials, under seal, we will endorse the license without inquiry as to whether that particular state will take one of our men. In my state we have compulsory annual registration and it works very much to our advantage. Every physician in our state, in lieu of a state tax on any real estate which he might own, must pay to the state $10 for the privilege of practicing in that state that year. After the first day of June of each year, nobody is licensed in that state until he renews his license and registers with the clerk of the county in which he happens to live.

DR. H. M. PLATTER, Columbus, Ohio: Class C schools have not been on the accredited list of the Ohio state board. Two years ago we interrupted a diploma mill at Marietta. We have to be constantly on the alert to prevent the certificates of physicians who have died being sold, to a new physician who never saw a medical college. We have our troubles in examinations. Last year we threw two out for cheating. Not one of us is so smart that he cannot be imposed on.

DR. C. C. PIERCE, Chicago: There is not at the present time nor has there ever been a graduate of any other than a class A school in the commissioned corps of the Public Health Service. After the war, the Public Health Service was authorized to recruit a reserve corps. We took in about 1,500, practically all of them ex-service men. We enrolled these men without examination, on the strength of their army service and the credentials they presented. I know of one instance in which a graduate of the St. Louis College of Physicians and Surgeons was accepted to do laboratory work in a Veterans' Bureau hospital. That man, however, is no longer connected with the service.

DR. HAROLD L. RYPINS, Albany, N. Y.: In the first place, registration must be annual. In the second place, it must raise enough money so that the administrator will have funds to investigate illegal practitioners. In the third place, the statute must be worded so that a man not having a license and not on the annual printed list will be automatically proved an unlicensed practitioner. In the fourth place, there must be permanent, efficient machinery for carrying out attacks against those who do not appear on the annual registration list.

DR. I. D. METZGER, Pittsburgh: The state of Pennsylvania last year passed a reregistration act which made necessary the tabulation of all the persons in the state licensed for the practice of the healing art. That includes not only physicians but also osteopaths, druggists and therapeutists. It also includes chiropodists and physiotherapists. There are some 13,000 in the state of Pennsylvania. A fee of $1 in charged.

DR. AUGUSTUS DOWNING, Albany, N. Y.: The members of every profession in the state of New York, including architects and engineers, have to register annually. This annual registration acts as a drag-net, and sooner or later every illegal practitioner is caught.

DR. ROBERT L. ROWLEY, Hartford, Conn.: We do not have an eclectic examining board in Connecticut at this time, which is due not to the fact that the law has been changed but to the fact that the governor has been unable to find enough members in the eclectic medical society to fill the appointments on the board. I think our troubles are at an end for a time.

FREDERICK C. WAITE, PH.D., Cleveland: You would think I had disclosed something here. Anybody who has subscribed for THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and has bought the directory has all the figures I have given. I have simply compiled them.

DR. DON M. GRISWOLD, Des Moines, Iowa: We send to the county medical society only the names and addresses and ask for corrections on that list. As to the funds for financing this measure, the money collected should be kept in a separate fund for carrying out the purposes of the act that was effective in collecting it, or else it should be put back into the general funds of the state, with the hope that a comparable sum will be made available to the department for carrying out the purposes of the act. Our state is essentially a rural state. The establishment of good roads and county hospitals is making it possible to have fewer well trained men take care of the medical needs of more people.

(To be continued)

THE DALLAS SESSION

Phi Chi Medical Fraternity Banquet

There will be a banquet for the Phi Chi Medical Fraternity on the Roof Garden of the Jefferson Hotel at 6:30 p. m., Thursday, April 22, under the auspices of the Xi Chapter of Baylor Medical College. Dr. J. O. McReynolds will be the toastmaster, and Dr. T. B. Pearson of Nicholasville, Ky., grand secretary of the Phi Chi fraternity, is expected to be present.

A Phi Chi registration booth will be located near the Registration Bureau in the Automobile-Manufacturers' Building, Fair Park. "Open house" will be maintained at the Chapter House of Xi, 3609 Gaston Avenue, Dallas.

Alpha Omega Alpha Dinner

A dinner for all members of the Alpha Omega Alpha Honorary Fraternity and for their friends will be held at the Baker Hotel, Dallas, at 6:30 p. m., Wednesday, April 21. After the dinner there will be a session of the Tenth International Council of the fraternity.

Practical Demonstrations of Periodic Health Examinations

A practical demonstration of the method of conducting periodic examinations of the apparently healthy will be given at 8:30 a. m. and 4:30 p. m. on Monday and Tuesday, April 19 and 20, in Hall F of the Automobile-Manufacturers' Building, Fair Park. These will be conducted by Professor Carter and other members of the Department of Medicine of Baylor University College of Medicine.

These demonstrations have been arranged for the members of the American Medical Association.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Health at Birmingham.—Telegraphic reports to the department of commerce from seventy cities with a total population of 29,000,000 for the week ending March 13 indicate that the highest mortality rate (27.4) is for Birmingham, while the rate for the group as a whole was 17.7. The mortality rate for Birmingham in the corresponding week of last year was 21.5, and for the group of cities as a whole, 15.

ARIZONA

State Medical Meeting.—The annual meeting of the Arizona State Medical Association will be held at Globe, April 26-28, under the presidency of Dr. Roderick D. Kennedy, Globe, and with the Gila County Medical Society acting as hosts; among the speakers will be Dr. William F. Braasch, Mayo Clinic, Rochester, Minn., "The Recognition and Treatment of Urinary Infection"; Dr. Charles C. Browning, Los Angeles, "The Influence of Focal Infection in Relation to Tuberculosis"; Dr. George Dock, Pasadena, Calif., "Iron Therapy; New Light on an Old Subject"; Dr. James F. Cooper, American Birth Control League, New York, "Contraceptive Technic"; Dr. Ancil E. Martin, Phoenix, "Tularemia"; Dr. John W. Flinn, Prescott, "The Pathology of Bone and Joint Tuberculosis," and Dr. Will G. Shultz, Tucson, "Ureteral Calculi." There will be a general meeting in the evening open to the public. Dr. George A. Bridge, Bisbee, is the president-elect.

CALIFORNIA

Society News.—The fifth annual meeting of the Pacific Coast Association of Anesthetists will be held in Oakland, April 28-May 1, with headquarters at the Hotel Oakland.——The April 1 meeting of the Los Angeles County Medical Association was a joint meeting with the pediatric society; the subjects discussed were "Measles," "Scarlet Fever," "Diphtheria" and "Intradermal Vaccination for Smallpox."

Licenses Revoked and Suspended.—At the regular meeting of the board of medical examiners of the state of California, Los Angeles, March 9-11, the license to practice as a physician and surgeon in the state of the following named persons was revoked:

Dr. William A. Strole, 323 West Sixth Street, Los Angeles; Dr. Robert W. Renwick, 5975 Moneta Avenue, Los Angeles; Dr. Charles K. Holsman, 1134 Market Street, San Francisco; Dr. Herbert E. Bogue, 11401 Santa Monica Boulevard, Sawtelle, Los Angeles County.

The licenses of the following physicians were suspended:

Dr. Ludwig H. Wolfsen, 848 Tenth Street, Modesto, for a period of one year; Dr. Frederick K. Lord, Ceres, for a period of one year. The period of probation of Dr. Olaf A. Kvello, Hemet, was continued for two years, with the further condition that he surrender his federal narcotic permit and his federal alcohol permit, both in his own behalf and on behalf of the hospital which he conducts, and that he neither apply for nor receive during the coming two years a federal narcotic permit or a federal alcohol permit.

CONNECTICUT

Amedeo Pasciuta Fined.—Amedeo Pasciuta, Meriden, was found guilty of practicing medicine without a license, in the New Haven Superior Court recently, and fined $100. Pasciuta claimed to be a graduate of the St. Louis College of Physicians and Surgeons in 1923; he was the only person passed by the Connecticut Eclectic Examining Board in 1925. The state department of health, however, declined to license Pasciuta on the ground that he was not graduated from an eclectic school.

DISTRICT OF COLUMBIA

The Kober Lecture.—Dr. Oscar B. Hunter, assistant dean and professor of bacteriology and pathology, George Washington University Medical School, was chosen by the Medical Society of the District of Columbia to deliver the lecture of the Kober Foundation at Gaston Hall in the Healy Building of Georgetown University, March 28. The subject of the lecture was "The Pathological Elements Underlying Myocardial Degeneration, Cardiac Failure and Cardiac Rupture Resulting from Acute and Chronic Occlusion of the Coronary Vessels" (illustrated with lantern slides).

GEORGIA

Personal.—Dr. James D. Manget, Atlanta, has been elected president of the staff of the Georgia Baptist Hospital.——Dr. George T. Olmstead has been elected medical director of the Savannah Hospital, to succeed Dr. Robert V. Martin.——Dr. J. E. Lester, Acworth, has been appointed health officer of Cobb County.——Dr. D. H. Monroe has been elected health officer of Cartersville, and also district health commissioner for Bartow County.——Dr. J. W. Wallace, Thomasville, has taken up his duties as county health officer of Thomas County.——Dr. John M. T. Finney, Baltimore, recently, was the guest of the Richmond County Medical Society, Augusta.

ILLINOIS

Lectures on Mental Hygiene.—Seven lectures will be given in Springfield between March 26 and May 7, by the Illinois Society for Mental Hygiene under the auspices of the Springfield Council of Social Agencies; among the lecturers will be Dr. H. Douglas Singer and Dr. Paul L. Schroeder, April 9, and April 29, on "Behavior Difficulties of Adolescents and Adults," and "Behavior Difficulties of Young Children," respectively.

Chicago

Informal Reception at Rush.—The faculty and student council of Rush Medical College of the University of Chicago held an informal reception in the library of the new Rawson Building, April 9, at 8:15; Dr. Frank Billings, for many years dean of the faculty of Rush College, gave an address.

Annual Dental Clinic.—The Chicago College of Dental Surgery will celebrate its forty-third anniversary with a "Home Coming Clinic," April 12-13, at the school, 1747 West Harrison Street.; the classes of 1886, 1891, 1896 and 1901 will be the guests of the college and the Alumni Association. There will be a banquet, Monday evening, April 12, at the La Salle Hotel.

Society News.—A dinner was held at the Hamilton Club, March 24, by members of the Chicago Medical Society in honor of Dr. Edward Starr Judd, Rochester, Minn., who addressed the society on "Cholecystitis with Consideration of Some of the Associated Problems."——Dr. Carl A. Hedblom will address the Chicago Tuberculosis Society, April 8, on chest surgery.——Prof. Robert H. Gault, Ph.D., of Northwestern University, Evanston, was the guest of honor of the Chicago Laryngological and Otological Society, April 5.——Dr. Solomon Strouse and Chi Che Wang, Ph.D., addressed the Chicago Society of Internal Medicine, March 22, on "Effect of Mechanical Work on Heat Production in Obese Individuals."——The dental operating room and the oral surgery unit in the new Passavant Memorial Hospital will be dedicated as a memorial to George H. Cushing, D.D.S., who founded the Chicago Dental Society and the Illinois Dental Society, and was one of the organizers of the American Dental Association.——The April 7 meeting of the Chicago Medical Society was a joint meeting with the South Branch; there was a symposium on "The Decompensating Heart," in which Drs. Isaac A. Abt, Joseph B. De Lee, Charles L. Mix and James Monahan took part.——The Chicago Roentgen Society will meet jointly with the Central Radiological Society of Illinois in Champaign, May 18, in addition to its regular meeting in May.——Dr. Arthur Steindler, professor of orthopedics, State University of Iowa College of Medicine, Iowa City, addressed the Chicago Orthopedic Society, April 9, on "Scoliosis."——Among others, Dr. Harry L. Parker, Mayo Clinic, Rochester, Minn., will address the Chicago Neurological Society at the Drake Hotel, April 15, on "Involvement of the Central Nervous System Secondary to Primary Carcinoma of the Lung."

INDIANA

Personal.—Dr. Lafayette Page, Indianapolis, has been elected president of the Indiana Academy of Ophthalmology and Otolaryngology; Dr. Louis D. Brose, Evansville, vice president, and Dr. Daniel S. Adams, Indianapolis, secretary-treasurer.——Dr. John E. Luzadder, Bloomington, has been appointed secretary of the Monroe County Board of Health.——Dr. Harold J. Norton has been appointed a member of the board of health of Columbus.

Another Package Library.—A package library service for the medical profession of Indiana has been proposed at the state university, which would be similar to that established in Wisconsin through the cooperation of the state medical society and the University of Wisconsin, and that of the American Medical Association. The classifications will

probably be made by the librarian of the Indiana University School of Medicine, and will consist of reprints, clippings from medical journals and of addresses before medical societies. Physicians may communicate, says the *Indianapolis Medical Journal*, with Mrs. Edna Hatfield Edmonson of the extension division of the state university or with the librarian of the state medical school. When the service is fully established, packages may be obtained for two weeks on request, free of charge, except postage one way.

IOWA

Personal.—Dr. Anthony P. Donohoe has been elected president of the staff of Mercy Hospital, Davenport, and Dr. James R. Guthrie, president of the staff of St. Joseph's Mercy Hospital, Dubuque.——Dr. William M. Park, Indianola, celebrated his fiftieth anniversary in the practice of medicine, March 1.——Dr. Franklin C. Hull, Carlisle, celebrated the fiftieth anniversary of his graduation in medicine, February 16.——Dr. Alvin H. Hendrickson has been appointed county physician at Sioux City.

Society News.—Dr. Ernest Sachs, St. Louis, conducted a clinic on brain lesions at Des Moines, March 9, and in the evening addressed the Des Moines County Medical Society on "Brain Injuries"; April 13, Dr. Edward H. Skinner, Kansas City, will address the society on "The Recognition and Management of Malignancy of the Uterus"; Dr. Skinner will address the high school assembly on "Cancer" in the forenoon, a union meeting of various clubs at noon, and a group of nurses in the afternoon.——Dr. Charles J. Drueck, Chicago, addressed the Des Moines County Medical Society, Burlington, recently, on "Practical Points in Proctology."

KENTUCKY

Superintendents Transferred.—Dr. W. M. Elliott, superintendent of the Central State Hospital, Lakeland, has been transferred to the superintendency of the Feeble Minded Institute at Frankfort, and Dr. Wallis W. Durham, superintendent of the Western State Hospital, Hopkinsville, has been appointed superintendent of the Lakeland Hospital. Dr. Elliott succeeds Dr. Thomas L. Taylor at Frankfort, who resigned to accept a hospital position in Hawaii.

MARYLAND

Exchange Professors.—Arrangements have been completed for an exchange of professors between the Johns Hopkins School of Hygiene and Public Health and the London School of Hygiene and Tropical Medicine. Robert W. Hegner, Ph.D., professor of protozoology at Johns Hopkins University School of Hygiene and Public Health, left for London, March 31. Dr. John G. Thomson, director of protozoology at the London institution, arrived in New York, March 26, and is expected in Baltimore within the next few days. The exchange of professors, which will cover a period of about six months, is the result of an arrangement between Dr. Andrew Balfour, director of the London school, and Dr. William H. Welch, director of Johns Hopkins University School of Hygeine and Public Health, for furthering an exchange of ideas and comparing the personnel and methods of the two institutions. This is the second exchange that has been made by the Johns Hopkins School of Hygiene and Public Health. The first was effected two years ago between the Hopkins department of medical zoology and the Peking Union Medical College of China, when William W. Cort, Ph.D., the Johns Hopkins University School of Hygiene and Public Health specialist in helminthology, was exchange professor.

MASSACHUSETTS

Personal.—Dr. Harry H. Nevers, for eighteen years city bacteriologist of Lawrence, has resigned.——Dr. S. Burt Wolbach, professor of pathologic anatomy, Harvard University Medical School, Boston, addressed the scientific staff of the Rockefeller Institute for Medical Research, New York, March 26, on "A Résumé of Rickettsia Research."——Dr. Frederic J. Cotton gave a luncheon at his home recently in honor of Dr. Dean Lewis of Johns Hopkins University Medical School, Baltimore, which was attended by a number of prominent surgeons of Boston.

Boston City Hospital.—A new maternity building for the Boston City Hospital will be erected at Concord and Albany streets, for which $750,000 has been appropriated; $250,000 has been appropriated according to the *Boston Medical and Surgical Journal*, for a research laboratory for the study of streptococcic infections. There has been erected a new outpatient building and a new roentgen-ray laboratory, and plans for other additions have been approved. During the year ending Jan. 31, 1925, more than 21,000 patients were admitted to the hospital and 210,173 treated in the outpatient departments. The total expenditures noted in the annual report amounted to $1,686,737.04, while the payments for services rendered to patients, including receipts from the state and cities and towns, amounted to $173,503.83. All departments for the care of patients, it appears, have been overcrowded, and larger facilities are needed.

MICHIGAN

Faculty Promotions at the University.—The board of regents of the University of Michigan, Ann Arbor, made the following promotions in the faculty of the medical school, February 25; Elizabeth C. Crosby, Ph.D., to be assistant professor of anatomy; Henry C. Eckstein, Ph.D., to be assistant professor of physiologic chemistry; Albert G. Young, Ph.D., to be assistant professor of pharmacology, and Daniel A. McGinty, Ph.D., Alrick B. Hertzman, Ph.D., and Detlev W. Bronk, M.S., to be assistant professors of physiology.

Society News.—Dr. John Phillips, Cleveland, addressed the Wayne County Medical Society, Detroit, March 9, on "Angina Pectoris"; Dr. George W. Crile, Cleveland, addressed the society, March 15.——Dr. William E. Shackelton addressed the Kent County Medical Society, Grand Rapids, March 24, on "Hernia of the Stomach Through the Diaphragm," and Dr. Augustus W. Crane, both of Kalamazoo, on "Acute Intestinal Obstruction."——Dr. Philip H. Kreuscher, Chicago, addressed the Wayne County Medical Society, March 23, on "Backache"; the meeting of the society, March 30, was in charge of the entertainment committee.

MINNESOTA

Society News.—Dr. Smiley Blanton addressed the Minnesota Academy of Medicine, March 10, on "Some New Applications of the Principles of Psychological Medicine."——Dr. Jacob Harry Bendes, Oak Terrace, was elected president of the Minnesota Sanatorium Association at the annual meeting; Dr. William D. Beadie, Cannon Falls, a vice president, and Beatrice E. Lindberg, St. Paul, secretary.

Lowest Birth Rate in Fifteen Years.—The secretary of the state board of health is said to have reported, March 24, that the birth rate in 1925 in Minnesota was the lowest in fifteen years, 20.9 per thousand of population. There has been a steady decline in the birth rate in the state since 1921, when it was 24; in 1910, however, the birth rate was 20.1, and in 1915 was the highest in recent years, 24.6.

MISSOURI

Personal.—Dr. H. I. Spector, St. Louis, announces that he has resigned his position as tuberculosis controller of St. Louis and hereafter will devote all his time to private practice.——Dr. Robert E. Crabtree has been appointed deputy health commissioner for Bates County.

Report on Medical Schools.—The report filed in the supreme court, March 6, by Special Commissioner Edwin J. Bean, recommended that the charters of the Kansas City College of Medicine and Surgery and the St. Louis College of Physicians and Surgeons be revoked; both of these schools have been repeatedly mentioned in the exposure of the medical diploma mills.

NEW HAMPSHIRE

New Hampshire Surgical Club.—The twenty-eighth semiannual meeting of this organization will be held at Nashua, Tuesday, April 27. The operative clinic will be held at St. Joseph's Hospital, beginning at 10 a. m.; in the afternoon there will be a discussion of the morning's work and the presentation of papers at the Nurses' Home of the Memorial Hospital. There are 200 regular members of the New Hampshire Surgical Club, all of whom, as well as the honorary members in other states, will be cordially welcome at this meeting.

NEW YORK

Rabies in Dogs.—There were 144 cases of rabies in dogs in New York in 1925, according to the Department of Farms and Markets, and ninety-seven of them occurred in Westchester county; thirteen rabid dogs were discovered in Nassau county at Hempstead in the five weeks ending February 26, and that was the same number, it is reported, which had been found in Hempstead in the previous nine months.

Resignations at State Hospitals.—The February number of the *State Hospital Quarterly* notes the resignations of the following physicians at the state hospital indicated:

Dr. Joseph L. Abramson, assistant physician in Kings Park State Hospital.
Dr. Theodore Gallup, assistant physician in Kings Park State Hospital.
Dr. Paul M. Jerrell, assistant physician in Gowanda State Homeopathic Hospital.
Dr. John W. Ross, assistant physician in Hudson River State Hospital.
Dr. Emanuel Allen Schiffman, assistant physician in St. Lawrence State Hospital.
Dr. Kathleen M. White, assistant physician in St. Lawrence State Hospital.

State Medical Election.—At the annual meeting of the Medical Society of the State of New York, New York, March 29-April 1, Dr. George M. Fisher, Utica, was elected president; Dr. James E. Sadlier, Poughkeepsie, president-elect; Drs. John E. Jennings, Brooklyn, and George M. Cady, Oswego, vice presidents; Dr. Daniel S. Dougherty, New York, secretary, and Dr. Charles Gordon Heyd, New York, treasurer. Dr. Edward Eliot Harris, New York, was elected speaker of the House; Dr. Harry R. Trick, Buffalo, vice speaker, and Drs. William H. Ross, Brentwood, Nathan B. Van Etten, New York, and Frederick H. Flaherty, Syracuse, trustees.

New York City

University News.—Columbia University is offering a five weeks course in internal medicine for qualified graduates in medicine from June 14 to July 16, and registration for this course closes May 22; it will be a practical course in the wards and laboratories of the Presbyterian Hospital. The fee is $100.

Dr. Landis Cited.—The state board of medical examiners summoned Dr. Leonard Lincoln Landis, New York, March 29, it is reported, to appear before the board in Albany, April 10, to show cause why his license to practice should not be revoked. The evidence on which the state board's summons was based is said to have been obtained recently.

Gifts to Medical School.—Chancellor Brown announces that, during the current year, gifts amounting to $29,000 have been made to New York University and Bellevue Hospital Medical College for use in various departments. R. T. Crane, Jr., Chicago, for the second year, has given $4,000 for the study of anaphylaxis, which is being carried on under Holmes C. Jackson, Ph.D., by Dr. A. Bret Ratner of the department of children's diseases; $10,000 was given to the school, anonymously, through Dr. John M. Wheeler for experimental work in ophthalmology, and $10,000 was given by Mr. Littauer for studies in the prevention and treatment of pneumonia.

OHIO

Personal.—Dr. Lyman A. Adair, Wooster, has been appointed acting county health officer to succeed Dr. Clarence D. Barrett, who resigned to become health officer at Mansfield.——Dr. Ralph W. Holmes Chillicothe, was elected secretary of the Ohio Society for Crippled Children at the recent annual meeting of the society in Columbus.——Dr. Stanley E. Dorst, Cleveland, has been appointed assistant professor of internal medicine at the University of Cincinnati College of Medicine.——Dr. Roger G. Perkins has been elected chairman of the Cleveland Health Council.——Joseph Webb has been elected chief surgeon of the Springfield City Hospital. ——Dr. James B. Poling has been reelected health commissioner of Lima for a five year period; Dr. Poling completed, April 1, the unexpired term of the late Dr. Arthur L. Jones.

State Medical Meeting.—The eightieth annual meeting of the Ohio State Medical Association will be held at Toledo, May 11-13, with headquarters at the Secor Hotel. The first general session will be combined with the first session of the house of delegates, May 11, 9:30 a. m.; the president Dr. Clarence D. Selby, and the president-elect, Dr. Leora G. Bowers, will deliver their addresses, May 11, at 8 p. m., when there will be an informal reception and dance. In addition to the Ohio physicians on the scientific program, addresses will be given by Dr. Foster Kennedy, Cornell University Medical College, New York, on "The Medical Expert in the Courts"; Dr. Stewart R. Roberts, Atlanta, Ga, "Functional Pressure Versus Structural Sclerosis"; Dr. Frank B. Granger, Boston, "Medical Diathermy"; Dr. Gordon B. New, Mayo Clinic, Rochester, Minn., "Newer Methods and Procedures in Plastic Surgery," and Dr. George W. Hall, Chicago, "Mental Disturbances as Observed in a General Hospital." The clinics to be held at various hospitals, May 10, will be announced on bulletin boards of hotels, May 9. The sixth annual tournament of the Ohio Medical Golfing Association will be at the Inverness Club, May 10.

OKLAHOMA

Illegal Practitioner Fined.—The *Journal of the Oklahoma State Medical Association* notes that William McNabb was recently arrested in Enid for practicing medicine without a license, and was fined $150 and costs.

Crippled Children's Clinics.—Under the auspices of the Oklahoma Society for the Care of Crippled Children, Drs. Samuel R. Cunningham, Oklahoma City, and William Patton Fite, Muskogee, held clinics at Wagoner and Talequah, February 26-27, for the crippled children of Wagoner and Cherokee counties.

Osteopath Charged with Manslaughter.—Albert L. Black, an osteopath of Guthrie, has been charged with manslaughter, it is reported, following the death of an 8 year old boy during an operation for removal of his tonsils. The trial involves the construction of the law to decide whether an osteopath is allowed to perform tonsillectomies in Oklahoma.

PENNSYLVANIA

Society News.—Dr. Arthur C. Morgan, professor of applied therapeutics, Temple University School of Medicine, Philadelphia, addressed the Northampton County Medical Society, Easton, March 19, on "Treatment of Acute Cardiac Tragedies." ——The annual meeting and election of officers of the Allegheny County Medical Society will be held at the William Penn Hotel, Pittsburgh, April 15.——Dr. Dean Lewis, chief surgeon, Johns Hopkins Hospital, Baltimore, addressed the Westmoreland County Medical Society, Greensboro, April 6, on "The Treatment of Fractures and Their Complications."

Philadelphia

Funds for Research Bureau.—The late George S. Cox, who left an estate of several million dollars, provided that within ten years after the death of his widow, his real and personal property should be transferred to a fund to establish a research bureau whose object will be to discover a cure for diabetes and to pursue any other line of medical research that the director of the bureau may think best. Dr. Levi J. Hammond, an executor and trustee under the will, is appointed director of the bureau with full power to appoint his successor, either by personal appointment or by will. The successive directors are to have the same power to appoint their successors and of managing the bureau. Dr. Hammond has been connected with the Methodist Episcopal Hospital for about thirty years; he is now chief of staff.

Philadelphia's Oldest Hospital.—A new outpatient department is being constructed at the Pennsylvania Hospital, Eighth and Spruce streets. The new building will be on the site of the old "West Picture House," which was erected in 1818 to house the painting by Benjamin West of "Christ Healing the Sick" and which later became the home of the Pennsylvania Historical Society; it probably will be completed by the end of 1926, which will be the one hundred and seventy-fifth anniversary of the founding of this hospital. John Small, said to have been the first outpatient treated in America, was treated at the Pennsylvania Hospital, Dec. 13, 1752; in the records of 1753, Benjamin Franklin wrote that "several outpatients have received the advice of the physicians and the use of the medicine received from London." The outpatient department since then has grown, until last year 58,673 patients were treated. The new outpatient department will be four stories high, and provide almost five times as much room as the department now occupies.

SOUTH DAKOTA

Rush Reunion.—Rush Medical College alumni of South Dakota are requested to meet in reunion at Aberdeen, May 20, during the state medical association meeting; Dr. Rollin T. Woodyatt, Chicago, will speak on "The New Rush."

State Medical Meeting.—The forty-fifth annual meeting of the South Dakota State Medical Association will be held in Aberdeen, May 19-20, under the presidency of Dr. William R. Ball, Mitchell. Among the visiting speakers will be Drs. Vincent J. O'Conor, Chicago (urology); Benjamin F. Lounsbury, Chicago (surgical clinic); Donald A. Nicholson, Seattle (traumatic neuroses); Casper W. Sharples, Seattle (diverticulitis of sigmoid); William R. Murray, Minneapolis (clinic—acute external diseases of the eye); Dr. Frederick Tice, Chicago (medical clinic); Rollin T. Woodyatt, Chicago (diabetic clinic); Maximilian Kern, Chicago (endocrine gland clinic), and Dr. Merrill M. Myers, Des Moines (heart clinic). The meeting will be held at the Orpheum theater. There will be an entertainment at the Country Club in the evening, but no formal banquet.

WISCONSIN

Medical Examiners Meeting.—At the January meeting of the Wisconsin State Board of Medical Examiners, the board voted to raise the endorsement fee from $2 to $10, and to refund $35 on reciprocity fees and $15 on examination fees, when the credentials were unsatisfactory. Two applicants were refused the privilege of writing the January examination, one because his foreign credentials were unsatisfactory, the other because he had only one year of premedical work; two applicants for reciprocity were refused a license because the board did not recognize their schools; namely, the Chicago Medical School and the St. Louis College of Physicians and Surgeons. In the future, no applicant will be permitted to write the examination until he has first satisfied the requirements of the basic science board in accordance with a recent law.

Society News.—Dr. Stanley J. Seeger addressed the Milwaukee Neuropsychiatric Society, March 25, on "Some Impressions of Neurologic Surgery in London."——Dr. Erwin R. Schmidt, professor of surgery, University of Wisconsin Medical School, Madison, addressed the Milwaukee Academy of Medicine, February 23, on "Pituitary Tumors" with report of an unusual case.——Dr. Arthur J. McCarey addressed the Green Bay Academy of Medicine, February 10, on "Physical Examinations."——Dr. Harold E. Marsh addressed the Dane County Medical Society, Madison, February 17, on "Use of Novasurol in Treatment of Edemas."——The Milwaukee County Medical Society devoted its February meeting to a review of the recent advances in the basic sciences bearing on clinical medicine by the full-time professors of Marquette University Medical School. Dr. Gideon Wells, professor of pathology, University of Chicago, will address the Milwaukee County Medical Society, April 9.——Dr. Damon A. Brown addressed the Racine County Medical Society, recently, on "Hexylresorcinol as a Urinary Antiseptic."——At an organization meeting, March 17, at the Milwaukee Children's Hospital, sixteen pediatricians became charter members of the Milwaukee Pediatric Society and elected Dr. Lorenzo Boorse president, Dr. Roy M. Greenthal vice president, and Dr. Mynie G. Peterman, secretary-treasurer.——The Medical Society of Milwaukee County adopted a new set of by-laws at the March meeting; a board of five directors henceforth will conduct the business of the society.

GENERAL

Reunion of Resident Physicians.—Former medical house officers and assistant resident physicians of the Peter Bent Brigham Hospital, Boston, will hold a dinner at the Hotel Adolphus, Dallas, Texas, April 21, at 6:30 p. m. Further information can be obtained from Dr. Henry A. Christian at the Hotel Adolphus after April 18.

Druggists May Sell Malt Tonic.—General L. C. Andrews, assistant secretary of the treasury, and in charge of prohibition enforcement, has granted permits to two well known manufacturers to sell to druggists only a "medicinal malt preparation" which may contain not "in excess of 4 per cent alcohol and must contain at least 25 per cent of solids." In making his announcement, General Andrews states that this new policy was adopted after thorough consideration of the question and will permit the restoration to the market of certain well known and established malt tonics. The manufacturers are required to accept responsibility for their distribution for legitimate purposes and to watch distribution closely and withdraw the product from any market where it appears that the tonic is being held for use as a beverage. General Andrews further states that this is practical and reasonable and is done for the purpose of making these tonics available to those who need them. A malt tonic containing 25 per cent of solids is by no stretch of the imagination a "beer," according to General Andrews. No physicians' permits are required to secure the product from druggists.

National Board of Medical Examiners.—During 1925, the examinations of the National Board of Medical Examiners were completed by 206 physicians, all of whom have been awarded the certificate of the board. There were in this number graduates of eighteen different medical schools, the greatest number from any one being from Harvard (thirty-eight), then Pennsylvania (twenty-six), then Rush (twenty-five), then Johns Hopkins (sixteen), and the least number, three, each from Creighton, Columbia, Illinois, Pittsburgh and Vermont. Examinations in parts I and II will be held, June 21-23, in all class A medical schools in the country where a sufficient number desires to take them. Dr. Walter L. Bierring has been appointed acting chief examiner of the Chicago Subsidiary Board, to succeed the late Dr. Albert C. Eycleshymer; seventeen candidates were examined by this board in January; all of them passed. The third annual meeting of the Associated Diplomates of the National Board will be in Dallas, Texas, during the session of the American Medical Association; the date and place will be definitely announced in the association's daily bulletin during the meeting.

New County Society Presidents.—The following physicians have recently been elected president of the county medical society indicated:

Dr. Otto C. Ahlers, Sherman, Texas, Grayson County Medical Society.
Dr. Alden Alguire, Belvidere, Ill., Boone County Medical Society (reelected).
Dr. John A. Ascher, Freeport, Ill., Stephenson County Medical Society.
Dr. Willet W. Binion, Benevolence, Ga., Randolph County Medical Society.
Dr. Claude M. Bloss, Okemah, Okla., Okfuskee County Medical Society.
Dr. Udonna C. Boon, Chickasha, Okla., Grady County Medical Society.
Dr. Alexander H. Bressler, Manhattan, Kan., Riley County Medical Society.
Dr. Joseph C. Bunten, Augusta, Kan., Butler County Medical Society.
Dr. Malcolm Campbell, Malvern, Iowa, Mills County Medical Association.
Dr. Jacob B. Cato, Hutsonville, Ill., Crawford County Medical Society.
Dr. William M. Cott, Okmulgee, Okla., Okmulgee County Medical Society.
Dr. George A. Clark, Scranton, Pa., Lackawanna County Medical Society.
Dr. Marcus L. Cone, Campbell, Mo., Dunklin County Medical Association.
Dr. James M. Dell, Gainesville, Fla., Alachua County Medical Association.
Dr. George R. Fox, Moreauville, La., Avoyelles County Medical Society.
Dr. Linwood M. Gable, Griffin, Ga., Spalding County Medical Association.
Dr. William P. Greening, Pauls Valley, Okla., Garvin County Medical Society.
Dr. Harry H. Hammel, Tecumseh, Mich., Lenawee County Medical Society.
Dr. Thomas J. Hickman, Lenoir City, Tenn., Loudon County Medical Society.
Dr. Jesse J. Hipes, Colgate, Okla., Coal County Medical Society.
Dr. Joseph W. Hope, Hampton, Va., Elizabeth City County Medical Association.
Dr. Leo W. Hornick, Johnstown, Pa., Cambria County Medical Society.
Dr. Harold L. Hurley, Jackson, Mich., Jackson County Medical Society.
Dr. John L. Jeffress, Ada, Okla., Pontotoc County Medical Society.
Dr. John W. Krohn, Joliet, Ill., Will-Grundy Counties Medical Society.
Dr. William H. Langston, Guyon, Okla., Texas County Medical Society.
Dr. James F. Leslie, Centralia, Wash., Lewis County Medical Society.
Dr. Lambert M. Lundmark, Ladysmith, Wis., Rusk County Medical Society.
Dr. Samuel T. McCabe, Johnsonburg, Pa., Elk County Medical Society.
Dr. Louis P. Munger, Hart, Mich., the Oceana County Medical Society.
Dr. George H. Parmenter, Beecher City, Ill., Effingham County Medical Society.
Dr. David P. Richardson, Union, Okla., Canadian County Medical Society.
Dr. John M. Ritter, Roosevelt, Okla., Kiowa County Medical Society.
Dr. Eugene C. Roseberry, Springfield, Mo., Greene County Medical Society.
Dr. George D. Ross, Liberty Hill, Texas, Williamson County Medical Society.
Dr. Samuel F. Sanders, Holdrege, Neb., Phelps County Medical Association.
Dr. Charles A. Shultz, Alvarado, Texas, Johnson County Medical Society.
Dr. Gust Sjolander, Midland, Mich., Midland County Medical Society.
Dr. Charles E. Slagle, Alliance, Neb., Box Butte County Medical Society.
Dr. Clinton F. Stofflet, Pen Argyl, Pa., Northampton County Medical Society.
Dr. William C. Ussery, Paris, Ky., Bourbon County Medical Society.
Dr. William A. Welton, Terra Alta, W. Va., Preston County Medical Society.
Dr. Thomas M. West, Fayetteville, N. C., Cumberland County Medical Society.

Senate Passes Lye Bill.—The bill to safeguard the distribution and sale of dangerous acids and alkalis was passed by the Senate, April 2. The measure is one which has for a long time been advocated by the medical profession, and provides for a uniform requirement to print the word "poison" in a conspicuous manner on containers of lye and other corrosive substances. The bill was originally introduced by Senator George Wharton Pepper of Pennsylvania; hearings were held by the Senate Committee on Interstate Commerce, when the reasons for the measure were fully presented. Senator James E. Watson of Indiana, chairman of the committee, has taken an active part in the passage of the bill; he wrote the report of the committee which summarized the reasons for the passage of the bill, and was in charge of the measure on the Senate floor. In a colloquy with Senator King of Utah, Senator Watson was able to overcome objections made to the bill. He said, in part:

Perhaps a dozen states have enacted legislation, but there are many of the states that have not done so. There is where most of the difficulty occurs and there is where the children are poisoned. In response to

1,448 questionnaires sent out to physicians, it was learned that at one time there were 490 cases of this kind under treatment at once. Is there any reason in the world why the word "poison" should not be put on the label? That is all the bill provides. Many of the manufacturers do put the word "poison" on the label and put it on the bottle in legible characters. Some do not do so. Is there any reason why they should not be compelled to do it in order to protect child life and in order to put all of them in the market on equal terms?

It is simply a proposition to label as "poison" the ordinary lye that is used on floors in all the homes of the country. The evidence shows that the ordinary lye that is used on the floors in the homes of the country is sold at practically all grocery stores. A can or bottle of it is left out and a child gets hold of it, puts it in its mouth, and it results in a stricture of the esophagus. There were brought before the committee pictures of many children who were found in that condition and who were treated for the difficulty. The Senator from New York [Mr. Copeland] is perfectly familiar with the whole situation and was present when the hearings were held.

I will state that the proposed legislation is approved by the American Public Health Association, the American Child Health Association, the American Medical Association, and by the American Wholesale Grocers' Association. The interest of the latter organization in the bill is due to the fact that lye and similar substances are sold in all the retail grocery stores. The National Association of Retail Druggists is also in hearty sympathy with the proposed legislation.

FOREIGN

Instances of Injury from Roentgen Rays.—The *Schweizerische medizinische Wochenschrift* brings an appeal signed by the representatives of the five leading medical societies of Switzerland, asking for data in regard to injury from the roentgen rays, or from the apparatus or current, affecting patients, roentgenologists or attendants. They state that the honor of the medical and especially of the roentgenologic science demands this investigation. The fear of frightening the public must not deter as the public is already apprehensive beyond reason. A similar collective inquiry has been going on in Germany.

Practitioners' Week at Paris.—Extensive preparations have been made for the approaching Journées médicales, July 15-19, at Paris. The aim is to present in compact form the latest advances in diagnosis and treatment by practical demonstrations in hospitals and private clinics, arranged especially for the benefit of general practitioners. Each pays 50 francs on registration. The secretary is Dr. Dujarric de la Rivière, 18, rue de Verneuil, Paris. The annex exposition is in charge of M. J. Faure, 42, rue du Louvre, Paris. A few lectures by visiting authorities and numerous excursions are planned, as also the foundation of an international union of physicians, under the initiative of Dr. Decourt, president of the Union des syndicats médicaux de France—organizations for promoting the material interests of the profession. "Vaccination Against Tuberculosis" is to be described by Calmette at the first general meeting, which is to be opened by the president of the republic. Prof. F. Widal will preside thereafter.

Personal.—A volume of his collected works is to be presented to Prof. E. Tanzi, Florence, on his seventieth birthday, during the seventh congress of the Italian Society of Neurology at Turin in April.——A gold medal was presented to Prof. E. Gallemaerts as he reached the retiring age and left the chair of ophthalmology at Brussels. He is president of the Académie de médecine at Brussels.——Drs. José Carracido, professor of biologic chemistry, Madrid, and H. G. Greenish, professor of pharmacy, London, were recently elected corresponding members of the French Académie de médecine at Paris.——Prof. E. Hédon, Montpellier, who recently shared the Monaco prize for his pioneer work on the pancreas, was invited to lecture at the Liége medical school in March.——Dr. L. Severin Petersen has been placed in charge of the newly completed model gynecologie clinic at Bergen.——Dr. L. Fredericq, Liége, has been elected to fill the vacancy from the death of Bergonié in the list of corresponding members of the Académie des sciences at Paris.——Dr. and Col. Demolder presided in the medical section of the third international Congress on Aeronautics held recently at Brussels. Dr. Sand, Brussels, emphasized the importance of aeronautics from the epidemiologic and other points of view besides the military. Among the resolutions adopted was one urging standardization of parts, arrangements, etc., and one appealing to manufacturers to provide protection for the head of the aviator, as nearly all the accidents result from being flung against the posts and wall of the plane.——The semireclining marble statue of Professor Ramón y Cajal was recently unveiled in the Madrid park. It stands on a high rectangular pedestal in the center of a square pool fed by two fountains. The rear wall of the pool towers higher than the statue and bears bronze inscriptions and a bronze lifesize figure of Wisdom. Cajal shared with Golgi the Nobel prize in medicine in 1906.

Deaths in Other Countries

J. F. Gemmill, professor of natural history, University College, Dundee, by drowning, February 10.——**Henry Rayner,** former vice president of the Section of Psychology of the British Medical Association and coeditor of the *Journal of Mental Science,* February 8, aged 84.——**Dr. Sigmund Exner,** professor of physiology, Vienna, aged 80, a pioneer in the localization of function in the cortex, in the physiology of light and vision, and in applied acoustics. He was also the founder of the "Phonogrammarchiv."——**Dr. A. Felsenreich,** Vienna, formerly professor of gynecology and obstetrics, aged 78.——**Dr. Johannes Gad,** emeritus professor of physiology at the German University of Prague, aged 84. In 1887 he founded, with Exner, the *Zentralblatt für Physiologie,* and in 1893 he aided in organizing the work in experimental physiology at the Western Reserve University, Cleveland.——**Dr. Van der Vloet,** Brussels, former president of the Société belge de neurologie and founder of the St. Vincent Hospital at Antwerp.——**Dr. S. Patellani-Rosa,** for whom a chair on social eugenics was founded at the University of Milan, aged 57.——**Dr. E. Roos,** Freiburg, professor of internal medicine, aged 59.——**Dr. Castilho Marcondez,** Rio de Janeiro, the pioneer in bronchoscopy and esophagoscopy in Brazil, aged 36.——**Dr. E. Labat,** professor of obstetrics at Toulouse, with an extensive rural practice, contributor to the *Revue des deux mondes,* aged 72.——**Dr. J. Barsony,** professor of gynecology at Budapest, aged 66.——**Dr. K. Reifferscheidt,** professor of gynecology at Göttingen, aged 52.——**Mme. Kouindjy,** wife of Dr. P. Kouindjy, one of the first women physicians to practice in Paris.——**Dr. William Charles Sullivan,** medical superintendent of Broadmoor Criminal Lunatic Asylum, England, March 1, aged 56.

Government Services

Training Camps for Reserve Officers

Two fifteen-day training camps for medical reserve officers will be conducted at Carlisle Barracks, Pennsylvania, one, June 16-30, the other, July 4-18. According to the *Military Surgeon,* the arrangements made thus far provide for a schedule of training as follows: first corps area, Three Hundred and First Medical Regiment, July 4-18; second corps area, Three Hundred and Second, Three Hundred and Third and Three Hundred and Twenty-Third Medical regiments, June 14-30; and 100 officers, July 4-18; third corps area, Three Hundred and Forty-Third, Three Hundred and Sixty-Fourth and Three Hundred and Sixty-Fifth Medical regiments, June 16-30; fourth corps area, Three Hundred and Seventh Medical Regiment, June 16-30. The dates for the training of four medical regiments from the fifth corps area had not yet been selected. The first medical regiment of the regular army stationed at Carlisle Barracks, and several hundred R. O. T. C. students in camp during these periods will participate in the program of instruction for reserve officers. Officers assigned to a medical regiment will receive practical training in the operation of the various components of the regiment. Opportunities will be afforded to see many other recent developments in medical department organization.

Plans for Veterans' Bureau Hospitals

The director of the U. S. Veterans' Bureau is preparing plans for increasing the capacity of the new hospital at Great Lakes, Ill., by about 300 beds. It is proposed to start the work before the end of this fiscal year, and to expend on the project about $600,000. There will be three additional buildings for patients, an auditorium, a recreation building and an administration building.——Additional construction is contemplated for the veterans' hospital at Palo Alto, Calif., which will provide 300 additional beds, an administration building, and nurses and attendants' quarters at a cost of about $900,000. Among the larger projects for which preliminary plans are being made by the Veterans' Bureau, are a 300-bed neuropsychiatric hospital to be erected near Boston, at a cost of $1,350,000; a 250-bed tuberculosis hospital at Tucson, Ariz., to cost $1,000,000, and the replacement of the present hospital at Alexandria, La., at a cost of $1,400,000; additional officers' quarters will be erected at Aspinwall, Pa., and various other hospitals will be redecorated.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 13, 1926.

Endowment of Research at the London Hospital

It has been decided to devote the gift of $250,000 recently made to the London Hospital by an anonymous donor for the endowment of research into the causes of disease to paying salaries to research workers, "so that men and women may have more opportunity of taking up research as a life work and not simply as a stop-gap until some more lucrative branch of medicine is opened to them." The following dispositions have been made: 1. An annual scholarship in pathology of $500 a year, open to students from Oxford and Cambridge. Selection is made by examination. It is hoped by this scholarship for junior men to keep in touch with those who have a leaning toward research; it gives such men an opportunity of showing their capacity in laboratories attached to a great hospital. 2. A research fellowship of $2,000 per annum, tenable for three years. The candidate must be a whole-time worker and devote his time to a subject chosen for him. Such a man would act as an assistant to a senior research worker. 3. Two senior pathologists, who will receive the remainder of the money available, and who will devote their whole time to research work of their own choosing. The two pathologists appointed for this purpose are Dr. S. P. Bedson of the Lister Institute, and Dr. W. Howard Florey, at present John Lucas Walker Scholar of Cambridge University and working in America on the Rockefeller Foundation. The work will be carried out in the Hale and Dunn laboratories of the London Hospital, and the staff, material and equipment of these laboratories will be at the service of these workers.

Vital Statistics

The lowest birth rate in England and Wales for any fourth quarter of the year, apart from the war year of 1917, and the highest death rate since the influenza epidemic of 1918, were recorded during the last quarter of 1925. Quarterly returns for that period show that the births registered numbered 166,416, and were 4,511 below the number recorded in the corresponding quarter of 1924. The births registered in the quarter corresponded to an annual rate of 17.0 per thousand of the estimated population. The deaths numbered 126,274, 17,639 more than in the corresponding quarter of 1924. During 1925, 710,979 births and 473,006 deaths were registered. The natural increase of population by excess of births over deaths was therefore 237,973, as compared with an average annual increase in the preceding five years of 349,045. The number of persons married during the year was 590,332. The marriage rate in England and Wales during the year was 15.2 per thousand, the birth rate 18.3, and the death rate 12.2. The birth rate was the lowest recorded except during the war years 1917 and 1918; the death rate was equal to the rate recorded in 1924.

Distemper Research

The project of the *Field* to investigate the causes and cure of canine distemper—one of the most prevalent and most obscure diseases—by means of "the Field Distemper Fund" was reported previously in these columns. A report has now been issued which contains the following: "Our program has involved entirely new methods of research and progress. The source of distemper has been proved to be an invisible extremely minute organism or virus capable of passing through filters that will hold back all ordinary microbes or bacteria. Though this virus cannot yet be grown or propagated in a test tube, it has already been stored by appropriate methods for over a fortnight. Though our observers are not yet satisfied in every detail of their proof, they are already well on the way toward bestowing immunity from distemper on ferrets, animals which are particularly susceptible to the disease; and this, of course, is the first step toward giving immunity to dogs themselves."

Reduced Charges for Laboratory Tests

Considerable hostility in certain quarters has been aroused by the announcement that the Institute of Pathology at Charing Cross Hospital has inaugurated, at the suggestion of Dr. Fenton, dean of the medical school, a system of cut rates for every pathologic, bacteriologic or chemical examination performed, and this will be available to the middle classes, through the medium of physicians all over the country. The differences in prices are shown by the following comparisons:

	Charing Cross	Elsewhere
Wassermann blood reaction.....	$1.25	$ 5.00 upward
Typhoid test	.60	2.50 upward
Blood counts for anemia.....	2.75	10.00
Tuberculosis test	.50	2.50 upward

Dr. Fenton says in the press: "Every single physician in the country can make use of our service. We have now been doing it for a fortnight. The first day we made 50 cents and yesterday we made $20. We do not intend to make money out of it. It is a purely philanthropic scheme. We must, of course, make it self-supporting and pay for the extra staff employed. Any money over and above that will be handed back to the public—either by actual donations to charity or in aiding other medical research work."

These low fees have aroused a good deal of criticism, and the powers of the general medical council and the censure of the British Medical Association have been hinted at. Sir William Smith, principal of the Royal Institute of Public Health, has written a letter of protest to the British Medical Association, challenging the right of a hospital to enter the commercial sphere. He also complains that circularizing physicians is a breach of the no advertising rule. The British Medical Association is considering the matter. On the other hand, the staff of the institute professes to be unconcerned and says that the British Medical Association can have nothing to do with the matter as it is not a private affair. "We do not make anything out of it, but we are doing a public service. Our scheme is to meet the needs of the middle class people who cannot afford the exorbitant fees charged for this class of work. We have to do it for hospital patients and so have room for doing it on a large scale. Physicians from all over the country send us blood to be examined. If they could not get this done so cheaply, their patients would have to go without the complete diagnosis."

Contamination of American Apples by Arsenic

In a previous letter (THE JOURNAL, Dec. 26, 1925, p. 2043) the finding of arsenic in American apples was reported. At a meeting of the Society of Public Analysts, Dr. H. E. Cox, M.Sc., read a paper on the presence of arsenic in apples. Attention was drawn to the matter by the occurrence of two cases of illness attributed to the spraying of apples with lead arsenate. He found that only five out of thirty-nine samples of Jonathan, King David and Newtown apples were free from arsenic, and eleven contained more than the statutory limit. The contamination is mainly, but not entirely, confined to the skin, arsenic having been found in the flesh of the fruit to the extent of about 3 per cent of that on the peel. It appears that rain does not remove all the arsenic. Washing under the tap, and even scrubbing, was found to leave appreciable amounts of arsenic on the fruit, presumably owing to combination of the arsenic with the proteins of the

skin. A circular has been issued by the ministry of health urging local authorities to examine samples of apples likely to be so affected, and to withdraw from sale any consignments that appear to be injurious.

Professor A. R. Cushny

The death at the age of 60 of A. R. Cushny, M.D., LL.D., F.R.S., professor of materia medica and pharmacology in the University of Edinburgh, removes the foremost worker on pharmacology in this country. Born at Speymouth, Morayshire, he was educated in Aberdeen University and after graduation studied at Berne and Strasbourg, and at the latter university was appointed assistant to the professor of pharmacology in 1892-1893. In 1893 he was elected professor of pharmacology at the University of Michigan, Ann Arbor, which post he retained till 1905, when he returned to this country on his appointment to the chair of materia medica and pharmacology in the University of London. In 1918 he went to Edinburgh to succeed the late Sir Thomas Fraser. There he reformed his department, setting up an experimental laboratory and embarking on plans for the development of physiologic research in its relations to pharmacology. He was one of the first to analyze the mode of action of digitalis on the heart. He established the general principles by animal experiments and then, in collaboration with the late Sir James Mackenzie, made a study of the action of the drug in auricular fibrillation. This formed the basis of much of the work of Lewis and others. His researches on diuretics were of the first importance and he greatly advanced our knowledge of the mode of action of the kidney. He was an authority on the action of alcohol and served on several official inquiries as to the use of that substance as a beverage. His textbook "Pharmacology and Therapeutics and the Action of Drugs" reached its eighth edition and is generally recognized as the leading and most scientific work of the kind. It has had a great influence on the study of pharmacology both in this country and in America. His book on "The Secretion of Urine" was published in 1917. He also contributed much to English and American journals.

BELGIUM

(From Our Regular Correspondent)

Feb. 10, 1926.

New Medical Foundation of the University of Louvain

The Medical Foundation of the University of Louvain has decided to establish a new medical center on the Congo which will comprise (1) a hospital, principally for the natives, with two physicians in charge; (2) a research laboratory under the direction of a doctor of natural sciences, and (3) a training school for nurses. Later, a training school for medical assistants will be established. Since the cooperation of the resident missions is indispensable for the enlistment and the support of pupils, Kisantu has been chosen as the site for the new undertaking. The mission of Kisantu, which has been for thirty years in charge of Belgian Jesuits, has promised to aid the foundation. The association is certain of being able to send each year two or three young medical graduates to Kisantu to serve as assistants for one year.

The Dick Test in Belgium

Dr. Bessemans has reported his experiences with the intradermal Dick test carried out with the toxin of a hemolytic streptococcus in four schools comprising 620 children. The reactions were 31.8 per cent positive, 34.1 per cent protein reactions, and 68.2 per cent negative. The percentage of protein reactions seems to increase with the age of the subjects. The author, therefore, regards the influence of age on the receptivity for scarlet fever and on the hypersensitiveness to ordinary proteins as corresponding to similar phenomena when the Schick test is applied. He confirms the value of the Dick test. In Belgium alone, scarlet fever carries off from three to four hundred children every year.

Alastrim in the Congo Region

Dr. Van Hoof has published a study on alastrim in certain districts of the Belgian Congo. The author considers alastrim or milkpox as a blending of smallpox and chickenpox; but believes that it should be regarded as a distinct disease, for the following reasons: 1. In Stanley Pool, for many years, the author was able to observe cases of smallpox, alastrim and chickenpox side by side, and a number of clinical facts made differentiation possible. Chief among these facts was the low mortality of milkpox. There is nothing to oppose the view that alastrim has developed from smallpox through modification of the virus, but such an assumption does not invalidate the contention that alastrim is a distinct disease. The history of the three affections reveals the gradual substitution of alastrim for smallpox and chickenpox. This lends support to the belief in the development of a varioloid, due to a definite micro-organism less virulent than that of smallpox, yet more virulent than that of chickenpox and foreign to that of cowpox. 2. Vaccination against smallpox failed to protect in the epidemic of alastrim in Stanley Pool. Furthermore, persons who have recovered from alastrim frequently contract cowpox. 3. While the virus of alastrim resembles that of smallpox in its clinical manifestations, it shows little affinity for animals usually receptive to smallpox. It has never been transmitted to rabbits, calves or goats, and one has to resort to an artifice to transmit it to a monkey. Furthermore (*a*) cowpox does not immunize the monkey against inoculation with alastrim; (*b*) alastrim does not immunize the monkey against inoculation with smallpox vaccine, and (*c*) the virus of alastrim immediately affects the monkey so that inoculation by the cutaneous route provokes a generalized condition in most cases. It takes on thus an "allergic" form which it retains on inoculation into man by the cutaneous route. Van Hoof points out that as a therapeutic agent the allergic virus taken from the monkey induces in man earlier and less intense reactions and that these are not followed by generalization phenomena. A state of immunity should be created. If cultivated in receptive animals, it will furnish a specifically active lymph.

Bayer 205 in the Treatment of Trypanosomiasis in Animals

In the veterinary laboratory of Ruanda-Urundi, R. Van Saceghem has been studying the use of Bayer 205 in the treatment of trypanosomiasis in animals. He found the results disappointing after the observations on the use of the drug in treatment of small laboratory animals. Doses of 15 Gm. of Bayer 205 per hundred kilograms live weight are fatal for cattle. At necropsy, lesions of the liver, intestine and kidneys were found, while the blood was not coagulated. Bayer 205 rapidly establishes tolerance. Successive doses, as well as single doses, effect only transient sterilization. Bayer 205 is more active against *Trypanosoma congolense* than against *T. vivax*. A dose of 5 Gm. of Bayer 205 per hundred kilograms live weight will not protect an animal that is inoculated at the same time with 5 cc. of blood infected with *Trypanosoma congolense*.

Floods

The Meuse basin and a portion of the region watered by the Scheldt have suffered serious damage from floods. Numerous committees have been formed to relieve the distress. The king and queen have contributed 2,000,000 francs (about $69,000). The Red Cross of Belgium immediately set to work to provide aid for the sufferers. Numerous contributions, among others, a considerable sum from the American

Red Cross Society, have been received. In addition, the sanitary situation is menaced by the pollution of homes, and in some sections the water supply has been contaminated. All the public services and the health officers are doing their utmost. Physicians in all parts of the country are lending their aid.

GENEVA

(From Our Regular Correspondent)

March 12, 1926.

Influence of Hydrogen Ion Concentration on Anthrax Bacillus

Some important research on the influence of hydrogen ion concentration on the anthrax bacillus has recently been carried on by Dr. S. H. Whitworth at the Institute of Veterinary Pathology of the University of Zurich. The heat resistance of anthrax spores depends not only on the temperature but also on the hydrogen ion concentration of the medium in which they are suspended. Therefore all declarations as to the heat resistance of anthrax spores in liquid mediums or probably in live steam must give not only the time within which the spores die at a certain temperature but also the p_H of the medium. If spores are taken from any solution without being washed, and are then dried, their surfaces will hold a certain amount of substances carried from the medium. If these spores are put in flowing steam, these substances will be diluted again, so that the spore is really surrounded by a film of solution with a certain composition and with a certain concentration of hydrogen ions. Therefore the definition of heat resistance of anthrax spores should give indications of the composition of the medium in which the spores are suspended during heating, or where they have been suspended before drying. It would seem advisable when practicable, in the disinfection of material infected by anthrax spores, to acidify the medium. That viability depends greatly on the p_H of the medium has been shown by other investigators working with other pathogenic organisms. A few species of pathogenic bacteria die after a certain time in the soil. The time in which they die will vary according to the species, the nature of the soil, and the p_H value of the soil. In soil containing a certain proportion of organic material, the hydrogen ion concentration may be changed by bacterial growth to such an extent that the organisms die. On the other hand, the change may be favorable to the existence of spores.

These researches may be thus summarized: The heat resistance of anthrax spores is influenced by the hydrogen ion concentration and the composition of the medium in which they are suspended. The optimal p_H for resistance is in the region of 7.0 (at 85 C.). There is a decrease in the resistance at any temperature, with a decrease in p_H below 7.0. This decrease in the resistance is considerable at p_H 6.5, is very marked at p_H 6.0, and is still more marked with further decrease of p_H. The resistance is decreased with increase in alkalinity, but this decrease in resistance is not so marked as on the acid side. Anthrax spores suspended in fifteenth molar phosphate mixtures show greater resistance to heat at 85 C. than those suspended in broth or in broth + 3 per cent gelatin, and the resistance is greater in the latter than in ordinary broth. There is a great variation in the heat resistance of individual spores. Some spores will survive heating for considerable periods in a medium of very low p_H.

Revision of International Sanitary Convention

At the recent meeting of the permanent committee of the International Bureau of Public Hygiene, a number of questions relating to the revision of the international sanitary convention of 1912 were examined. Detailed attention was given to special provisions which may eventually be proposed concerning the Far Eastern countries. The committee received the report of the fifth session of the committee of hygiene of the League of Nations, held in Geneva in October, 1925, whose resolutions were approved by the international bureau. One of the resolutions of the Committee of Hygiene of the League of Nations was concerned with the forthcoming decennial revision of the international list of diseases and of causes of death. At the last meeting of the international commission (held in 1920), which was charged with the decennial revision, the nomenclature could not be communicated to the interested governments in definite form until 1924. At present only Great Britain and the United States have adopted this nomenclature, and the committee voiced the hope that other nations would adopt it soon. The committee accepted its responsibilities under articles 8 and 10 of the international opium convention, signed at Geneva, Feb. 19, 1925. Communications to the committee concerning cholera in British India show that the Bengal delta is the endemic focus of this disease. The Indian government has undertaken to use all possible measures against cholera. Active propaganda can extend anticholera vaccination among the Asiatic natives without making it compulsory, as is proved by the results obtained in Dutch India. Vaccination of pilgrims against cholera is to be proposed in Egypt. New data were received from British India, Manchuria, Netherlands and the United States on rodents and their cutaneous parasites, and will be published later in the general report.

A plan was considered for research work leading to revision of the pathology and prophylaxis of human variola. This will be carried out through investigations made by members of the committee of the international bureau of public hygiene and the Committee of Hygiene of the League of Nations, competent specialists of different countries and researches in various selected laboratories. Various other communications were received concerning variola and alastrim in Belgium, England and British India.

Papers were presented dealing with the frequency of locomotor ataxia and general paralysis in British India and Bulgaria, and on the results of investigations made in England on the occurrence of these diseases in soldier beneficiaries of war pensions. This investigation was concerned with about 100,000 subjects treated during the war with arsphenamine, who could be closely followed. Of these only ten developed tabes or paralysis. This result favors the thesis that arsenical treatment tends to decrease rather than to increase the proportion of tabetic and paralytic patients. Still, further investigations are necessary, and the committee has decided to examine the influence of race, mode of life and other circumstances on the frequency of tabes and general paralysis in different countries. The malaria treatment of general paralysis will receive further investigation.

A preliminary report on scarlet fever based on investigations made by the committee was discussed. Other papers concerned scarlet fever in Bulgaria, Czechoslovakia, Greece, Japan, Poland, South Africa and Switzerland. Vaccination with Gabritchevsky's vaccine, immunologic experiments, immunization with Dick's toxin and treatment with convalescent serum are all open to investigators. The general opinion was that terminal disinfection has no prophylactic value in scarlet fever and other contagious diseases.

Another discussion revealed the fact that legislation in various countries concerning biologic products and arsphenamine is divergent in its principles and application. Some countries control manufacture of the preparations; others merely control their sale. Various other communications were presented concerning diseases of the Mediterranean basin; infantile kala-azar and other leishmaniases; dissemination of leprosy; epidemic icterus; the part played by railroads in the spread of infectious diseases; scurvy, and the results of combating syphilis in Algeria.

JAPAN

(From Our Regular Correspondent)

Kyoto, March 8, 1926.

New Universities

The opening ceremony of the Korea Imperial University is to be held, April 1. About three weeks before that the following appointments will be made: Prof. Unokichi Hattori, Litt.D., as president, and various professors as deans of faculty in the institution. Appointment of the other professors will be made public after the ceremony at the beginning of April. It is settled that Prof. Dr. Kiyoshi Shiga will be a senior professor of the medical college.

According to the announcement made by the department of education, another imperial university, including a medical college, will be established in Formosa in April, 1928. It is reported that some professors and instructors will be sent abroad to study medical science.

Military Ambulance Airplanes

According to the health department of the League of Nations, the Japanese army has decided to organize an aerial ambulance corps. The newly built planes can carry five men at a time—two patients, an army surgeon, a hospital sergeant major and the pilot. The trial flight made at the Tokorozawa aerodrome some days ago proved that the machine has unique merits.

Fecundity of Young Married Japanese Women

Statistics made public by Dr. Ryuichi Susaki following his investigation of 414 married Japanese women show that the greatest number marry at the age of 19. Next in order are those of 20 and 18 years. Irrespective of the age when married, the majority become pregnant in the third month of married life. In 84.9 per cent of cases the first children were born in the first three years after marriage. Of the 414 women, those who first menstruated at 14 or 15 years of age were most likely to conceive early in married life. Many of those who first menstruated at 14 years of age and married at 22 conceived in the first month of married life. Marriage between acquaintances or relatives gives the highest rate of early conception; that of illicit union, the lowest. Generally speaking, those who conceived for the first time during the first three years of married life were those whose husbands were not more than eight years older than themselves. The interval between the first birth and the second was in most cases from 1.1 to 2.5 years.

Japanese Practitioners in the Far East

The number of Japanese practitioners in China and other parts of the Far East is increasing each year. According to the latest investigation made by the department of foreign affairs of Japan, not less than 600 are in practice in South China, including Shanghai and Hongkong, where their number is respectively larger than in any other place. It is sure that they are practicing medicine in those parts of the world, though it is uncertain whether all of them are registered in the practitioners' list of the Japanese government. In Singapore, Dutch India, and many neighboring provinces and countries, nearly the same number of Japanese practitioners as in South China have also been establishing themselves in practice.

The Keio Dietetic Laboratory

A dietetic laboratory in the Medical College of Keio University will be ready for use by next July. The structure of the laboratory is nearly the same as the rooms for bedside and clinical training in the same institution, except that there is added a culinary room perfectly furnished for research. The faculty will consist of a professor, an assistant professor, two instructors and several assistants. The main object is clinical research in vegetable dietetics under the direction of the professor. Prof. Dr. Kenta Mori is to be head of the faculty, and Mr. Minoru Hara, B.A.S., of the government dietetic laboratory, the assistant professor.

Achard in Japan

Dr. Charles Achard, professor in the University of Paris and general secretary of the medical section of the French Academy, arrived in this country, March 18, for a three months' investigation of medical facilities in Japan. He is scheduled to lecture in each medical college while in Tokyo. The Japan Medical Association, which is to hold its general meeting in April, will ask him to be present as an invited guest.

An Improved Crematory

Dr. Shige Koike of the Sasaki Kyoundo Hospital, Tokyo, has constructed an improved crematory. Recently he made an announcement about his apparatus, which possesses the following merits: It is utterly smokeless and odorless. Since it takes only an hour or so to cremate a body, it is economical of time and money. The bereaved may take back the ashes with them on the day they come. Thus the dignity of the dead is not violated. Since little fuel is needed, the cost of cremating a body is but half a dollar or so. Since neither a chimney nor a big site is necessary, construction is inexpensive. It may be built even in crowded parts of towns. Since it is simple to operate, no expert is needed.

ITALY

(From Our Regular Correspondent)

Feb. 15, 1926.

The Course in Hygiene Organized by the Red Cross Society

The Italian Red Cross Society plans to organize, February 1, its fourth course in hygiene and medical child welfare work in the Emilio Maraini antituberculosis preventorium in Rome. The object of the course is to demonstrate to physicians the modern technic of child hygiene and child welfare. The course will be conducted by Professor Valagussa, director of the preventorium, and will extend over four months, at the end of which time those who have attended will be given a diploma, and, in addition, prizes will be bestowed on those who did especially good work. The Red Cross will regard the diploma as entitling the holder to special consideration in the selection of personnel to aid in carrying out the educational campaign that it expects to launch later.

Donations to Scientific Institutes

In memory of Dr. Ognibene, his widow has recently given the University of Modena 80,000 liras, with which to establish two Ognibene prizes open to students of the college of medicine. To the same university, there has recently been presented about 1,000,000 liras, the gift of Dr. Araoz, director general of the public health service in Argentina and professor at the Faculty of Medicine in Buenos Aires. The money is to be used to found a university institute to promote tuberculosis prophylaxis.

The Twenty-Fourth Congress of Obstetrics and Gynecology

The twenty-fourth session of the Società italiana di ostetricia e ginecologia was held in Rome, December 17-19, under the chairmanship of Senator Pestalozza, professor in the University of Rome. After referring to recent advances in obstetrics, Professor Pestalozza briefly reviewed the history of the Roman school, which, founded by Asdrubali in 1787, numbered among its members some eminent teachers and made noteworthy contributions in its field.

The scientific work of the congress was begun with the paper by Professor Decio, director of the obstetric clinic at the University of Siena, who treated the theme: The Constitutional Type in Relation to Gynecologic Diseases. The

essayist recalled the varied criteria on which we must base our determination of the constitutional type. The influence of the type is manifested not only in sexual development but also in the evolution of gynecologic diseases. The writer emphasized that a better knowledge of constitutional factors would result in more rational treatment, and that treatment would consist in procedures intended to improve the constitution of the subject: climatotherapy, physical exercise, hydrotherapy, organotherapy, venesection.

Dr. Temesvary discussed constitutional abnormalities as an etiologic factor in hernias of women. Dr. Orru spoke on a virilism as a result of ovarian tumor, and Professor Bompiani took up venesection in the treatment of some cases of altered menstrual function. A long discussion followed, which was closed by Professor Decio.

The second main theme on the program was "Diseases of the Endocrine System in Relation to Pregnancy," on which a paper was presented by Professor Gentili, director of the Clinica ostetrica-ginecologica at the University of Pisa. Following the paper there was a general discussion. Professor Gentili replied to all who discussed the question.

A resolution was passed to devote the next congress to a celebration in honor of the founders of the society who are still living; namely, Professors Bedeschi, Fabbri, Guzzoni degli Ancarani, Mangiagalli, Negri and Pestalozza.

Convention of the Italian Society of Dermatology and Syphilography

The Società italiana di dermatologia e sifilografia held its twenty-second annual session in Rome, December 17-19. Prof. Jader Cappelli, director of the Clinica dermosifilopatica at the University of Turin, presided. The main subject on the program, "The Pathogenesis of Congenital Syphilis," was presented by Professor Lombardo of Pisa. Communications on subjects related to the main theme were presented by Martinotti, Piccardi and Artom. The lively general discussion which followed was closed by Professor Lombardo. Professor Bosellini, director of the Clinica dermosifilopatica at Rome, was chosen president for the ensuing year.

Activities of the Italian League to Combat Cancer

The governing council of the Lega italiana per la lotta contro il cancro has recently published a report for 1925. The league has two aims: (1) to promote more exact knowledge and more effective treatment of cancer, and (2) to support propaganda for early diagnosis of the disease and for the prophylactic treatment of the lesions that predispose toward it. The league was founded in Bologna in 1922. In September, 1924, at Milan, the league was reorganized on a broader basis. Acting with a national committee appointed by the Red Cross, the league is planning to found in Milan an institute for cancer research, which will be the first institute of the kind to be established in Italy. During the past year, the league has developed through the organization of diagnostic centers and through regional committees established in the provinces. Of the latter, twenty-eight have already been established in Italy, in addition to one in Alexandria, Egypt. Thirty-one others are being organized, and it is expected that, very shortly, such committees will be functioning in all the provinces of the realm, as well as in many Italian colonies in foreign lands.

The work of organization was accompanied by a publicity campaign carried on by means of lectures and the distribution of pamphlets and leaflets. Lectures were held in Florence, Siena and Palermo. Among the pamphlets distributed was one by Professor Vernoni of the University of Florence, entitled "Cancer and the Means of Combating It" and another by Professor Rietti of Ferrara on the subject of "Anticancer Organizations, with Especial Reference to the Institutes Existing in Foreign Countries for the Study and Treatment of Cancer." There is also a publication in course of preparation by Professor Alessandrini, instructor in parasitology at the University of Rome.

The minister of the interior has given his support to the publicity campaign, has appropriated funds to aid in carrying on the work, and has requested the prefects of the provinces to stimulate local initiative and the organization of committees to provide for the coordination of existing movements. In addition, the public health service has sent a questionnaire to the physicians in the province, in which it requests data concerning local societies for combating cancer, special dispensaries or ambulatoriums, diagnostic centers, clinics or hospital wards for the treatment of cancer patients, and roentgenologic or radium therapy establishments. The president of the league has also appealed to the ministers having jurisdiction to see to it that the distribution of radium among the hospitals and clinics, for therapeutic purposes, be better controlled. Many banking houses, provincial deputations, communes and societies for the promotion of public welfare have contributed to the league.

A Graduate Course in Industrial Medicine

In the clinic for occupational diseases at the University of Naples, a graduate course in industrial medicine, extending from January 25 to March 25, has been announced. The course, intended solely for physicians, will consist of lectures, clinical and laboratory work, and visits to industrial establishments and to institutes of social welfare.

BERLIN

(From Our Regular Correspondent)

Feb. 27, 1926.

Relative Sexuality

Before the Berliner medizinische Gesellschaft, Prof. M. Hartmann, whose researches on protozoa are well known, delivered an address recently on relative sexuality and its importance to fecundation. From numerous observations, partly his own and partly those of others, Hartmann concludes that every living cell is bisexual and possesses the complete female and male anlagen. That eventually the female or the male potentiality becomes preponderant is owing to the fact that one anlage is furthered or exists in a naturally dominant form, whereas the other anlage is either retarded or is less dominant. As the result of the preponderant influence of one or the other factor, a cell becomes definitely male or female with reference to another cell in which the opposite factor predominates. The female and male germinal cells are therefore not purely and absolutely female or male but are only relatively so. Hartmann assumes that the difference in sex is based on quantitative and not qualitative differences. Fortified by this conception, Hartmann had formerly reached the conclusion that in lower organisms there may be not merely two extremes of sexual differentiation but possibly several degrees marking distinctions of sex. Recently Hartmann has found evidence in support of such an assumption. At the German Zoological Station in Naples, he investigated the sexual behavior of a specimen of algae of the genus *Ectocarpus*. This species belongs to one of those lowest forms of organisms whose germinal cells cannot, from their external appearance, be classified as male and female. Each individual of the species produces minute germinal cells provided with an anterior and a posterior flagellum and resembling *Flagellata* in other respects as well, which *inter se* are morphologically alike (isogametes). But that these isogametes are, in fact, physiologically differentiated is shown, with respect to *Ectocarpus*, by the observation that only gametes that are produced by different plants are brought into sexual union, and the behavior of the various gametes

is such that some may be regarded as male and some as female. When union of the gametes has occurred, certain ones, thus marked as female, lose their motility and attach themselves to the bottom of the container, while the others comport themselves as male germinal cells, for they hover about the female cells in large numbers until finally a union of a male germinal cell with the sedentary or sessile female cell takes place. Hartmann observed that it was possible to distinguish strong, less strong and weak females, the same being true of the males. When Hartmann brought together types that had been recognized as weakly masculine with types that he had found to be strongly masculine, these "isosexual" gametes effected a sexual union, the weakly male gametes comporting themselves now as female. The corresponding observation was made that weakly female gametes entered into sexual union with strongly female gametes, the weakly female gametes functioning now as male gametes. It is evident, therefore, that individual gametes are not absolutely male or female. Whether a sexual union takes place between two gametes does not depend on qualitative but rather on quantitative differences. How these differences in constitutional makeup are brought about remains to be determined, but Hartmann is inclined to the view that external conditions are the deciding factors.

Statistics of Medical Students at Prussian Universities

The Prussian Bureau of Statistics published recently statistical data on the students at Prussian universities. The total number of medical students, nationals and foreigners included, during the winter semester, was 3,387 men and 659 women. There were three men and two women under 18 years of age, and 178 men and twenty-six women over 30 years old. The remainder ranged in age between 18 and 30. The distribution of students according to confession was as shown in the adjoining table.

Confession	Men	Women
Protestant	1,734	319
Roman Catholic	809	136
Jewish	412	118
No religious confession	30	13
Miscellaneous (Mohammedan, etc.)	257	38

There were more students in their tenth semester than any other: 576 men and 100 women. (The medical course in Germany covers ten semesters.) In their eleventh semester there were 130 men and twelve women; 116 men and eight women were in their twelfth semester or above.

Of the medical students, 2,354 men and 419 women were planning to become physicians, while 327 men and 79 women were intending to practice dentistry.

There were 1,988 students with diplomas from humanistic (classical) gymnasia and 985 students from the "Realgymnasia" (no instruction in Greek).

A record of the profession or occupation of the fathers of the students yielded the following result: high officials, 353 men students and 114 women; officials of the middle type, 635 men and 102 women; government clerks, 35 men and 1 woman; the liberal professions (physicians, etc.), 579 men and 89 women; independent callings without academic training, 76 men and 10 women; army or navy officers and higher officials, 45 men and 10 women; other military persons, 2 men and 3 women; landed proprietors, 76 men and 16 women; farmers and small landowners, 200 men and 16 women; industrialists, 886 men and 194 women (among these, 113 and 47, respectively, were owners or managers of factories); craftsmen, 154 men and 19 women; employees in leading positions, 104 men and 15 women; employees in minor positions, 201 men and 47 women; laborers, 17 men and 1 woman; no occupation, 52 men and 17 women.

Marriages

CECIL B. O'BRIEN, Greencastle, Ind., to Miss Edna Louise Koss of Indianapolis, January 20.

JOHN O. CLETCHER, Tuscola, Ill., to Miss Jessie Wilson of Flushing, Ohio, in February.

OTIS W. MCQUOWN, Marion, Ind., to Miss Harriet Joost of Chicago, Dec. 31, 1925.

Deaths

Jesse Ralph Harris ✠ Lieut. Col., U. S. Army, retired, Niagara Falls, N. Y.; University of Buffalo, Department of Medicine, 1901; assistant in anatomy Cornell University Medical College, 1901-1902; was commissioned in the U. S. Army in 1902 and retired as lieutenant colonel in 1919 on account of physical disability; since retiring was health officer of New Britain, Conn., and Tampa, Fla.; connected with the Tennessee State Board of Health, 1923-1924; aged 51; died, February 6, of cerebral hemorrhage.

Jacob Edward Gilcreest ✠ Ennis, Texas; Louisville (Ky.) Medical College, 1876; past president of the Texas State Medical Association and the Cook County Medical Society; emeritus professor of gynecology and formerly lecturer on gynecology, Baylor University College of Medicine, Dallas; member of the state board of health, 1909-1911; at one time chief surgeon of the Gainesville (Texas) Sanitarium; aged 75; died, March 18, of myocarditis.

Cyrus Strong Merrill, Albany, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1871; member of the Medical Society of the State of New York, and the American Ophthalmological Society; emeritus professor of ophthalmology and otology, Albany Medical College, since 1876; on the staffs of the Albany and Child's hospitals; aged 78; died, March 17.

Mack Rogers ✠ Birmingham, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1889; formerly professor of anatomy, Birmingham Medical College; was a member of the House of Delegates of the American Medical Association, 1909 and 1910; at one time vice president of the Southern Medical Association; served during the World War; connected with the U. S. Veterans' Hospital, no. 99, Excelsior Springs, Mo.; aged 61; died, March 20, of heart disease.

Walter Scott Dotson ✠ Lebanon, Tenn.; University of Nashville Medical Department, 1901; formerly secretary of the Wilson County Medical Society; served during the World War; on the staff of McFarland Hospital; aged 47; died, March 13, at the Protestant Hospital, Nashville, of cerebral hemorrhage.

Hartwig Kandt ✠ Brooklyn; Long Island College Hospital, Brooklyn, 1906; member of the American College of Physicians and Brooklyn Society of Internal Medicine; on the staffs of the Methodist Episcopal, and the Wyckoff Heights hospitals; aged 50; died, March 25, of pneumonia.

Nelson Water Thompson, Port Chester, N. Y.; University of Michigan Homeopathic Medical School, Ann Arbor, 1901; formerly on the staff of the Metropolitan Hospital, New York; medical superintendent of the United Hospital, where he died, March 18, of heart disease, aged 49.

Thomas Joseph Kilmartin, Waterbury, Conn.; Medical Department of the University of the City of New York, 1895; member of the Connecticut State Medical Society; for nineteen years city health officer; aged 53; died, March 13, of chronic endocarditis and myocarditis.

Albert Polon, New York; Cornell University Medical College, Ithaca, 1910; member of the Medical Society of the State of New York; instructor in neurology, Columbia University College of Physicians and Surgeons, New York; aged 44; died, March 15, of heart disease.

Raymond Albert Rice ✠ Columbus, Ohio; Starling Medical College, Columbus, 1897; member of the Associated Anesthetists of the United States and Canada; on the staff of the Grant Hospital; aged 50; died suddenly, March 11, at New Orleans, of heart disease.

Philip Turner Southall, Amelia, C. H., Va.; Medical College of Virginia, Richmond, 1873; member of the Medical Society of Virginia; president of the Amelia County Medical

Society; at one time member of the county board of health; aged 74; died, February 16.

Charles Pinckney Hough ⊕ Jefferson City, Mo.; Missouri Medical College, St. Louis, 1875; formerly surgeon general of the Montana National Guard; at one time health officer of Butte, Mont., and on the staff of the St. James' Hospital; aged 80; died, March 12.

Stephen White Roof ⊕ University and Bellevue Hospital Medical College, New York, 1906; on the staffs of the Nyack (N. Y.) Hospital and the Manhattan Eye, Ear and Throat Hospital; served during the World War; aged 50; died, March 13.

Abbott B. Lichtenwalner, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1891; member of the Medical Society of the State of Pennsylvania; aged 64; died in March, at the Hahnemann Hospital, of chronic myocarditis.

Henry Moffat ⊕ Yonkers, N. Y.; Medical Department of Columbia College, New York, 1881; on the staffs of the Ossining (N. Y.) Hospital, the Sprain Ridge and St. Joseph's hospitals, Yonkers; aged 70; died, March 25, of heart disease.

William Garth Clopton ⊕ Baltimore; University of the South Medical Department, Sewanee, Tenn., 1904; aged 48; died, March 16, at the Massachusetts General Hospital, Boston, following an operation for carcinoma of the rectum.

John A. Sheibley, Shermans Dale, Pa.; University of Pittsburgh School of Medicine, 1891; member of the Medical Society of the State of Pennsylvania; formerly member and president of the school board; aged 67; died, March 15.

Willis Beecher Moodie, Valhalla, N. Y.; University of Vermont College of Medicine, Burlington, 1909; member of the Medical Society of the State of New York; aged 42; died, March 5, of streptococcic septicemia and diabetes.

Frank Forrest Floyd ⊕ Statesboro, Ga.; University of Georgia Medical Department, Augusta, 1899; secretary of the Bullock County Medical Society; served during the World War; aged 50; died, March 11, of pneumonia.

John T. Wallingford, Covington, Ky.; Medical College of Ohio, Cincinnati, 1882; formerly health officer of Covington; aged 68; died in March, at Brentwood Heights, Calif., of acute myocarditis and hypostatic pneumonia.

William Henry Katzenbach ⊕ New York; Bellevue Hospital Medical College, New York, 1871; formerly professor of clinical medicine, New York Polyclinic Medical School; aged 78; died, March 19, at Trenton, N. J.

Samuel Wood Thurber ⊕ New York; Medical Department of Columbia College, New York, 1894; formerly instructor of laryngology, Columbia University College of Physicians and Surgeons; aged 58; died, March 16.

John W. Cline ⊕ Santa Rosa, Calif.; College of Physicians and Surgeons, Keokuk, 1881; Bellevue Hospital Medical College, New York, 1894; aged 65; died, Dec. 24, 1925, of chronic myocarditis and chronic nephritis.

Roscoe Lee Logan ⊕ San Rafael, Calif.; California Eclectic Medical College, Los Angeles, 1901; aged 50; died, March 7, at St. Francis Hospital, San Francisco, of lobar pneumonia, and acute hepatitis.

Harry Schuyler Oyler ⊕ Lincoln, Ill.; Marion-Sims College of Medicine, St. Louis, 1901; served during the World War; aged 55; died in March, at the Deaconess Hospital, of interstitial nephritis.

William Walter Barrett, Peachland, N. C.; Kentucky School of Medicine, Louisville, 1892; aged 61; died, March 11, at the Anson Sanatorium, Wadesboro, of injuries received in a fall.

William Kline ⊕ Phillipsburg, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1891; on the staff of the Warren Hospital, where he died, March 3, of heart disease, aged 60.

Shelby Harrison Kelsay, Cropper, Ky.; Kentucky University Medical Department, Louisville, 1904; member of the Kentucky State Medical Association; aged 46; died, March 14, of pneumonia.

James Wesley Cartwright ⊕ Payne, Ohio; Long Island College Hospital, Brooklyn, 1882; Fort Wayne (Ind.) College of Medicine, 1892; aged 69; died, March 15, at Jacksonville, Fla.

Isaac L. Coy, Archbold, Ohio; Cincinnati College of Medicine and Surgery, 1898; member of the Ohio State Medical Association; aged 66; died suddenly, March 17, of cerebral hemorrhage.

Albert Joseph Kopf ⊕ Denver; Marion-Sims College of Medicine, St. Louis, 1899; member of the Missouri State Medical Association; aged 57; died, March 1, at St. Luke's Hospital.

Louis Brechemin ⊕ Col., U. S. Army, retired, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1876; served during the World War; aged 73; died, March 11.

Jared Charles Hepburn ⊕ Chicago; Chicago Medical College, 1890; on the staff of St. Bernard's Hospital; aged 62; died, March 17, at Phoenix, Ariz., of heart disease.

Harold Jerard ⊕ Pleasant Hill, Mo.; University of Missouri School of Medicine, Columbia, 1875; aged 73; died, March 14, at the Research Hospital, Kansas City.

Rex Alexander Schlag, Prairie du Sac, Wis.; Denver and Gross College of Medicine, Medical Department University of Denver, 1903; aged 46; died, March 9.

Julius Garst, Worcester, Mass.; University of Michigan Medical School, Ann Arbor, 1878; also a pharmacist; aged 70; died recently, at Roswell, N. M.

Aden G. Lovell ⊕ Mount Vernon, Ky.; Louisville Medical College, 1883; president of the Rockcastle County Medical Society; aged 72; died, March 11.

Alfred Carson Williams ⊕ Reynolds, Ind.; Indiana University School of Medicine, Indianapolis, 1912; aged 36; died, March 17, of bronchopneumonia.

Hudson Jerome Kinne, Frankfort, Mich.; Baltimore Medical College, 1892; aged 64; died, March 18, at a sanatorium in Battle Creek, of myocarditis.

Edward J. Gabriel ⊕ Payson, Ill.; St. Louis College of Physicians and Surgeons, 1891; aged 57; died, March 11, at the Blessing Hospital, Quincy.

William Henry Holland, Ninety Six, S. C.; University of Maryland School of Medicine, Baltimore, 1891; also a dentist; aged 62; died, March 7.

Newton M. Williams, Jackson, Tenn.; University of Louisville (Ky.) School of Medicine, 1890; aged 77; died, March 11, of chronic nephritis.

John B. Campbell, Brooklyn; New York Homeopathic Medical College, New York, 1878; aged 60; died, March 2, of cerebral hemorrhage.

Benjamin Robley Lennox, Sikeston, Mo.; Missouri Medical College, St. Louis, 1884; aged 67; died, March 6, following a long illness.

Henry Bell King ⊕ York, Pa.; Jefferson Medical College of Philadelphia, 1883; aged 65; died, January 24, of chronic myocarditis.

Daniel Alcott Holland ⊕ Winfield, Kan.; University of Louisville School of Medicine, 1909; aged 42; died, March 7, of influenza.

Charles Henry Walker, New York; Medical Department of the University of the City of New York, 1894; aged 59; died, March 16.

William R. Siron, McDowell, Va.; University of Maryland School of Medicine, Baltimore, 1891; aged 61; died, February 16.

Samuel Lee Stonebraker ⊕ Tyrone, Pa.; College of Physicians and Surgeons, Baltimore, 1905; aged 45; died, February 25.

Harry Keep Lum ⊕ Monroe, Wash.; University of Michigan Medical School, Ann Arbor, 1885; aged 63; died, February 15.

Peter J. Lenhart, Wauseon, Ohio; University of Wooster Medical Department, Cleveland, 1875; aged 78; died in March.

Kelley W. Travis, Princeton, Mo.; American Medical College, St. Louis, 1879; aged 73; died, March 7, of pneumonia.

Clinton G. Buffington, Decatur, Ill.; Missouri Medical College, St. Louis, 1881; aged 66; died suddenly, March 14.

Lucius G. Waterman ⊕ Buffalo; University of Buffalo Department of Medicine, 1883; aged 77; died, March 11.

Clayton A. Bullard, Royal Oak, Mich.; Detroit College of Medicine and Surgery, 1902; aged 48; died, March 2.

Wallace Mathews ⊕ Quitman, Ga.; Atlanta Medical College, 1890; aged 58; was found dead, March 11.

Clifford R. Case, Cincinnati; Medical College of Ohio, Cincinnati, 1888; aged 64; died, March 12.

Thomas N. Courson, Devereux, Ga.; Southern Medical College, Atlanta, 1886; died, March 9.

Thomas Henry Lindley, Cedar Rapids, Iowa (licensed, Iowa, 1889); aged 81; died, March 8.

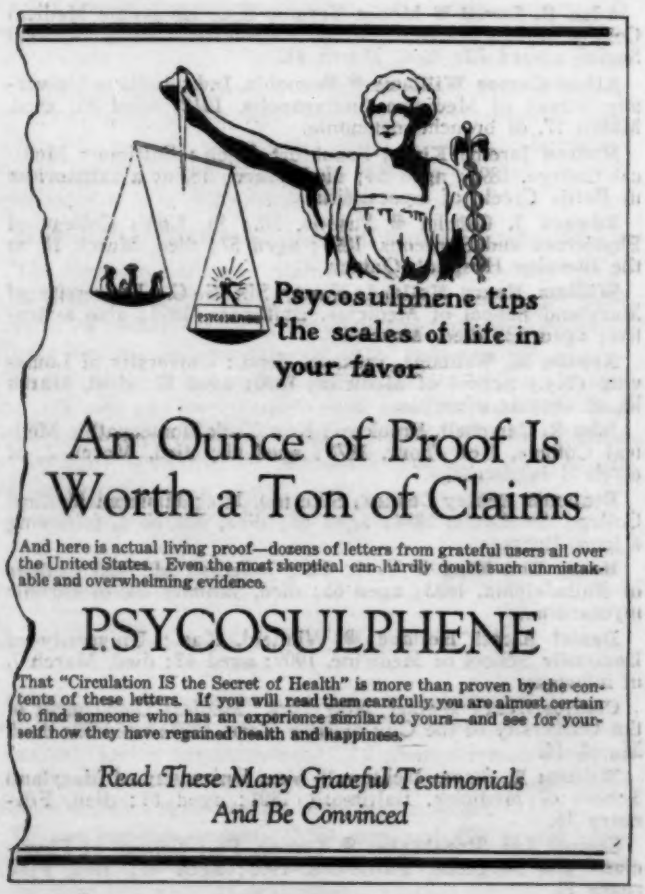
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

PSYCOSULPHENE

Spring Hill, W. Va., Seeks a Place in the Sun of Quackery

From that metropolitan center (population 200), Spring Hill, West Virginia, comes the latest medical marvel, "Psycosulphene," exclusively distributed by McNickle & Co. Psycosulphene is "a Product of Chemical Research"—take it from the manufacturer. It "Promotes Circulation Through the Feet." Those who are suffering from "kidney trouble,"


Psycosulphene tips the scales of life in your favor
An Ounce of Proof Is Worth a Ton of Claims
And here is actual living proof—dozens of letters from grateful users all over the United States. Even the most skeptical can hardly doubt such unmistakable and overwhelming evidence.
PSYCOSULPHENE
That "Circulation IS the Secret of Health" is more than proven by the contents of these letters. If you will read them carefully you are almost certain to find someone who has an experience similar to yours—and see for yourself how they have regained health and happiness.
Read These Many Grateful Testimonials And Be Convinced

"run down constitution," "nervous disorders" or what-have-you, are instructed to drop a small pinch of Psycosulphene into each shoe each day. "The thoughtless will smile, but the wise know there are 27,000,000 pores in the soles of your feet."

This brand of quackery appears to be profitable: for instance, in the Charleston (W. Va.) *Gazette* for Jan. 19, 1926, appear four full-page advertisements of "Psycosulphene! The Wonder Treatment." No small proportion of the white paper thus used up is devoted to the ubiquitous and inevitable testimonial. We learn that Mrs. P. R. O'Dell of Charleston was a cripple with rheumatism; she was either confined in bed or walking around on crutches; her heart was affected, too, and her eyes were poor, and she was so weak that she could not "wring a dish-rag." Then Psycosulphene came into her life and in just three weeks by putting a pinch of this marvelous powder into the foot of each stocking, she became entirely well. Moreover, she lost "twenty pounds of unnatural weight."

Mrs. W. H. Fish of Columbus, Ohio, is another testimonial giver, not on behalf of herself, but in the interest of her husband. Mr. Fish, it seems, suffered from rheumatism; worse still, "he was attended by twenty-nine different doctors." Then came Psycosulphene, and Mr. Fish "began to sleep and enjoy life again." May Albertson had long suffered from malnutrition. After she "had doctored for seven years" she heard of Psycosulphene and her color came back. She gained eleven pounds in four weeks.

Mrs. Ralph Fox of Pennsylvania "suffered from a nervous breakdown" and after spending $200 in doctors' bills without effect and being confined to her bed for seven years, she put Psycosulphene into her stockings. Now she can take care of her housework! Another Charleston citizen, Mr. P. C. Bays, had eczema for fifteen years. He began using Psycosulphene and he "scaled off like a fish" and is completely cured. Then there was Peter Adams, who was cured of asthma, and Mrs. Nellie Allard, who recovered via the Psycosulphene route from swollen feet and hysterics.

These are just a few of the wonders that the Charleston *Gazette* passes on (At the usual advertising rates?) to others who may be suffering from rheumatism, nervous breakdown, malnutrition, swollen feet or hysterics. Not that the conditions just enumerated exhaust the field covered by Psycosulphene. This powder, a pinch of which is to be put in one's socks, is the "last word" in such conditions as "blood poisoning," anemia, "female trouble" or "prostate gland trouble."

In this same advertisement we are told that while "clap-trap and ballyhoo were never more in vogue than today," yet "the great forces of Nature are silent," which presumably explains why the Psycosulphene advertisement shouts raucously from four full pages of the Charleston *Gazette* in letters that can be read a block away.

As already mentioned, Psycosulphene is used externally. The instructions are to put five pinches of the powder in the stockings or socks the first day, four pinches the second day, three pinches the third day, two pinches the fourth day, and then one pinch for every day of the remaining seventy-two days that the preparation is to be used. For "best results" the purchaser is urged to wear the same stockings "from four to ten days"!

In order that the public and the medical profession might be apprised of the composition of this "product of chemical research" an original package of Psycosulphene was turned over to the A. M. A. Chemical Laboratory with the request that it be analyzed. The Laboratory Report follows:

LABORATORY REPORT

"One original package of Psycosulphene (McNickle & Co., Spring Hill, W. Va.) was submitted to the A. M. A. Chemical Laboratory for examination. The package contained 169 Gm. (approximately 6 ounces) of a pale yellowish white pulverized powder. No statement of the composition appeared on the package. Qualitative tests indicated the presence of sulphur, starch, boron and carbonates. Boron was present as sodium tetraborate (borax); the carbonate was present mainly as sodium bicarbonate. Alkaloids, heavy metals, benzoic and salicylic acids, camphor, essential oils were not found.

"Quantitative determinations yielded the following:

"Loss over sulphuric acid	2.7 per cent
"Sulphur	4.6 per cent
"Starch	16.6 per cent
"Bicarbonate and carbonate (as carbon dioxide — CO_2)	21.8 per cent
"Boric anhydride (B_2O_3)*	15.0 per cent

* The figures for B_2O_3 and CO_2 yield somewhat higher theoretical value for sodium borate ($Na_2B_4O_7.10\ H_2O$) and sodium bicarbonate ($NaHCO_3$), respectively, than are actually present; this is to be expected as the composition of both borax and sodium bicarbonate varies.

"From the foregoing it may be concluded that Psycosulphene contains essentially the following substances in the approximate amounts:

"Sulphur	5 parts
"Starch	15 parts
"Borax	40 parts
"Baking soda	40 parts"

Here, then, we have a few cents' worth of baking soda, borax, starch and sulphur mixed together, put in a fancy box, given a misleading name, and sold for $3.50. No wonder McNickle & Co. can afford to purchase four-page spreads in city newspapers. Supposing, however, our federal law required the declaration on the label of the names and quantities of the active ingredients of "patent medicines." How many people could be fooled into believing that a mixture of

this sort will cure prostate trouble, blood poisoning, varicose veins, neuritis or the score of other conditions for which Psycosulphene is directly or by implication recommended? The medical faker will flourish just so long as secrecy and the mystery that goes with secrecy is permitted by law.

Correspondence

"POLLEN THERAPY WITH PROTEIN-FREE EXTRACTS"

To the Editor:—The article by Black and Moore (THE JOURNAL, January 30) contains statements that are distinctly inaccurate and misleading.

F. W. Heyl (*J. Am. Chem. Soc.* **39**:1470, 1917) found that ragweed pollen used in his work contained 4.99 per cent of total nitrogen, of which 2.6 per cent was soluble in aqueous saline solution. Of this 2.6 per cent, from 0.6 to 0.8 per cent was protein in nature, part being albumin and proteose.

H. L. Huber and K. K. Koessler (*Arch. Int. Med.* **36**:751 [Dec.] 1925) obtained solutions of ragweed pollen (1:10, or 10 per cent) which contained 1.54 and 1.61 mg. of nitrogen per cubic centimeter. According to Heyl's figures, these 10 per cent solutions would contain about 0.5 mg. of protein nitrogen per cubic centimeter, or about 3 mg. of pollen protein per cubic centimeter.

Glycerol and water have similar solvent properties. With regard to the nitrogenous constituents of *Artemisia* pollens, we have confirmed this general fact in that we find that glycerol-water-salt extracts and water-salt extracts of the same pollen concentrations contain identical amounts of nitrogen.

Various conditions may modify the usual qualitative protein tests, so that the failure to secure positive tests as Black did is not definite proof of the absence of protein. Further, it usually is considered most probable that protein is present in unpurified biologic extracts containing nitrogen (especially large amounts).

With especial regard to the testing of glycerol solutions of *Ambrosia trifida* pollen, we find the following:

A 2 per cent solution of pollen in 50 per cent glycerol-physiologic sodium chloride solution was used. It contains about 0.3 mg. of nitrogen per cubic centimeter.

In the biuret test, the color of the solution interferes with the recognition of the test. Reducing substances are present which render testing impossible, owing to the rapid reduction of the cupric ion in the alkaline solution.

The Adamkiewicz reaction is negative, but it is also negative with an egg-white solution in 50 per cent glycerol that contained 0.32 mg. of nitrogen per cubic centimeter.

In the Liebermann reaction, a slight red coloration occurs. This test is not definite.

In the xanthoproteic reaction, a distinctly positive test is obtained, though not as intense as with an egg-white solution of the same nitrogen concentration.

The reduced sulphur reaction is negative, but so is egg-white solution of the same nitrogen concentration.

In the Millon reaction a precipitate is formed that does not turn red on heating.

Trichloracetic and picric acids do not give precipitates, while tungstic and phosphotungstic acids do.

Sodium tungstate and sodium bicarbonate are not protein precipitants as such.

Mercuric salts give definite precipitation.

These statements do not mean that we believe the active agent in pollen extracts to be a protein. The recent work of Grove and Coca (*J. Immunology*, 1925) is quite definite, though not absolutely conclusive, on this point. If one is acquainted with the difficulties encountered by investigators working on the isolation of the active principles of insulin and pituitary extracts, one will understand the practical impossibility of stating that a substance is nonprotein until the active substance has been isolated as a pure material. Actual isolation as a pure material and determination of molecular weight with analysis of the elements present is the only absolute criterion on this point.

GORDON A. ALLES, M.S., Los Angeles.

[The letter of Dr. Alles was referred to Dr. Black, who replies:]

To the Editor:—It seems to me that Dr. Alles has missed the intent of our report. We are not contending that our pollen extract was protein-free in the absolute sense of the word. We found that a pollen extract after a year's time gives no reaction to tests that were previously positive. We felt that this indicated a very definite quantitative change in the protein content and justified the statement made—that the extract contained no protein "so far as may be determined by the ordinary qualitative tests."

With this extract we obtained results as good as those obtained by use of extracts containing considerable quantities of protein. We felt justified in believing, therefore, that this was another indication that quantitative reduction—if not absolute elimination—of protein had no effect on the active substance in pollen extracts.

J. H. BLACK, M.D., Dallas, Texas.

"REACTION OF NORMAL PERSON TO TUBERCULIN"

To the Editor:—My attention has been called to the answer in reply to the question on the reaction of the normal person to tuberculin (THE JOURNAL, February 6, p. 437). To me this answer is most unsatisfactory and misleading and has only added confusion, without in the least giving the desired information. The quotation from Koch (*Deutsche med. Wchnschr.* **16**:1029, 1890) is quite correct, but based purely on clinical observation some thirty-six years ago, long before the specificity or the mechanism of the reaction had been determined.

As might be anticipated, the specificity was first studied in the lower animals, particularly cattle, by such investigators as Frankel, Voges, Kuhnan, Bang and von Behring. The tuberculin test in cattle gave a positive or negative result, corresponding to the presence or absence of tuberculosis as determined by necropsy. In the human being, identical findings have been demonstrated by the anatomic studies of Lebert, Ballenger, Schleuker, Nägeli and Burkhardt, and the diagnostic application of tuberculin by Hamburger, Fraenkel, Franz, Beck and many others.

With the great mass of accumulated data and the generally accepted specificity of the tuberculin reaction, a positive indicating the presence of and a negative an absence of a tuberculous infection, we may return to the original question. It will be observed that the question specifies "in a person who has no tuberculous infection of any kind." Under such conditions, *no* reaction of any kind would be obtained, no matter what amount of tuberculin is employed, unless the dose should be repeated after a hypersensitiveness has developed and then the reaction is interpreted on the basis of a foreign protein and not the presence of a tuberculous lesion.

The distinction between a healthy individual without *any* tuberculous lesion and one clinically healthy, perhaps in excellent health, but with an old tuberculous lesion is an entirely different problem. Information is requested as to dosage of tuberculin to produce a reaction. This has been answered so far as the individual entirely free from a tuber-

culous lesion is concerned, but in the apparently healthy or suspect, the diagnostic dose will vary according to the individual authority, as there is no fixed rule. Koch directed that 1 mg., then 5, then 10 be given, and, if no reaction occurred, to repeat the last dose. This is still followed by some clinicians, while others advise smaller or even larger amounts, preferably a single injection, in order to avoid confusion due to protein hypersensitiveness.

The second paragraph in the answer, the quotation from Tice's Practice, is quite superfluous and unnecessary as it refers to the therapeutic use of tuberculin, which is not requested.

FREDERICK TICE, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PERFORATING ULCER OF THE FOOT

To the Editor:—Please give me the best treatment of perforating ulcer of the foot on the walking side of the heel. The ulcer is of the size of a half-dollar, dark and round, with surrounding skin elevated. It peeled two or three times, and now is back again rotting like gangrene. If you think that it is not a perforating ulcer, please tell me. Please withhold the name in publishing.

M.D., Mexico.

ANSWER.—Perforating ulcer of the foot was first described by the French; and from the time Nelaton published his paper in 1852, the French literature has contained many articles on the condition. For this reason it is usually referred to under the French name mal perforant du pied.

Poncet, in 1872, was the first to recognize the relation of the condition to disease of the nervous system, and it was shortly after this that the relationship between diseases of the spinal cord, particularly tabes, and perforating ulcer of the foot was established. It is now well established that it may result from several very different causes.

It occurs chiefly in males, usually in men over 40 years of age. It is very rare in the young, but two cases have been reported in children. It occurs almost always in working people who are on their feet a great deal, and the ulcer (or ulcers—for there may be two or even three) occurs at points of pressure on the plantar surface of the foot. The three points where the ulcer occurs are, in order of frequency, beneath the metatarsophalangeal articulation of the great toe, beneath the fifth toe, and beneath the heel.

While pressure and trauma unquestionably are important in determining the site and development of the ulcer, these mechanical factors are only contributory and are not the underlying cause. Today it is generally accepted that the chief factor is some change in the nervous system. The underlying nervous lesion may be located in the central nervous system or in the peripheral nervous system. It results in sensory, vasomotor and trophic changes which may affect the nerves of the entire limb or be limited to the portion of the nerves immediately in the vicinity of the ulcer. Among the types and causes of peripheral neuritis that may lead to the development of a perforating ulcer are traumatic neuritis irrespective of the nature of the trauma, tumors of nerves, tumors that press on the nerves, pressure on the nerves by callus, alcoholic neuritis, neuritis following freezing or burns, and the neuritis of leprosy. The anesthesia present seems particularly to favor the development of a perforating ulcer. Changes in the central nervous system, particularly tabes dorsalis, apparently are of greater importance. Other important causes are: injury to the cord due to fractures of the vertebrae, tumors of the cord, spina bifida, with its associated cord changes, and syringomyelia. Other less frequent causes are: paresis, progressive muscular atrophy, amyotrophic lateral sclerosis, and spastic spinal paralysis. Although typical perforating ulcers of the foot have been reported in diabetes, the typical diabetic ulcer is usually painful, whereas the typical mal perforant is characterized, as a rule, by the entire absence of any pain.

Treatment includes not only the local condition, but, wherever possible, the underlying causal condition as well, as in alcoholic neuritis and in syphilis. This is particularly important in peripheral nerve lesions.

Methods of local treatment that have been reported by various authors as having produced benefit in certain cases are the use of constant and induced electric currents, roentgen-ray treatment locally; high frequency currents; hot-air treatment, and nerve stretching. It is important to keep the patient in bed, i. e., off of his feet, and the ulcer must be dressed aseptically and kept surgically clean.

Lasting results can be achieved only by surgical intervention. In cases in which no communication exists between the ulcer and the neighboring bone or joint, careful and complete excision of the ulcer, going well into the healthy tissue, is all that is required. This can usually be done without the use of any anesthetic, as there is usually total anesthesia of the tissues about the ulcer. If the ulcer is very superficial, it may suffice to excise merely the thickened epidermis that forms the margin of the ulcer. But it is best to dissect off the floor of the ulcer in order to determine whether there is not a communication with the adjacent joint. For this reason it is best to operate with a constrictor applied. In case one finds that the ulcer communicates with the joint or bone, all destroyed bone should be removed in order to guard against a recurrence. And even with the best local treatment, recurrences are frequent. After the ulcer has been completely cut out, well into normal tissues, the defect fills with granulations. After the wound has healed, this area is protected in walking by wearing a large bunion plaster to keep pressure off this part of the foot.

Occasionally, secondary infection of so extensive a nature develops as to threaten the patient's life. Here more radical operations are required. It is only rarely, however, that amputation is indicated. Amputation is most often indicated when the ulcer is due to a lesion of the central nervous system, as tabes, paresis or syringomyelia; for in these conditions simple excision is of little avail and is usually followed by recurrence. One may first do a low amputation; but if a low amputation is followed by a recurrence, it is probably advisable to do the second amputation at once high up through the thigh.

PREMENSTRUAL RISE IN TEMPERATURE IN TUBERCULOSIS

To the Editor:—Can you tell me the cause and the significance of the premenstrual rise in temperature in women with tuberculosis of the lungs? Should this disappear as the case becomes arrested and goes on to an apparent cure? Is a premenstrual rise in temperature found in normal, healthy women? Kindly omit name.

M.D., Washington, D. C.

ANSWER.—Belfield found in the examination of a series of women who were in apparently normal health that there was a slight premenstrual rise in temperature. It is not the practice ordinarily to take, as a routine, daily temperatures of people in apparently normal health. It is only when a patient goes to an institution, such as a tuberculosis sanatorium, that the routine taking of temperatures is established, and in taking this routine temperature it becomes evident that many women have a definite premenstrual rise in temperature. There is no known reason for this temperature disturbance, but it is thought that the so-called internal secretions are in some way responsible. While this phenomenon has been observed for a great many years, there is no special significance attached to it.

PARALYTIC ILEUS AND LOCAL ANESTHESIA

To the Editor:—I operated on a patient a few weeks ago, under local anesthesia, for a double inguinal hernia. I used 3½ ounces (100 cc.) of 1 per cent solution of procaine. The sacs of each hernia were empty at the time of the operation. About thirty-six hours following the operation, he developed a paralytic ileus which proved fatal at the end of the thirty-six hours. Do you know of a similar case, and do you know of any reference that might give me some pertinent information?

M.D., Neb.

ANSWER.—Two questions seem to be involved in the discussion of the death of the patient following operation with local anesthesia for double inguinal hernia—the pharmacology of procaine and the surgical problem.

The pharmacology of procaine does not lend any support to the view that it caused paralytic ileus after thirty-six hours, because it is eliminated rapidly after it enters the blood stream, and with care in injection little of the procaine could come into direct contact with the intestine.

It seems impossible to express any definite opinion, unless the preoperative history and the necropsy findings are given. No cases are recorded in which 1 Gm. of procaine given subcutaneously caused paralytic symptoms in the intestinal tract.

TREATMENT OF SNAKE BITE

To the Editor:—The season is approaching when, in this region, there are frequent snake bites. Several of my patients have been inquiring what is the best immediate treatment for this condition. Before the patient can get medical help or a physician can reach the patient, sometimes five or six hours elapse, because of distance, poor transportation, or lack of telephone service. One of the practitioners here has been advocating the following immediate treatment: (1) arrest of circulation, ligating with strap or cord; (2) sucking freely to withdraw poison; (3) rubbing over wound and round it with a few drops of petroleum containing iodine (this for pain); (4) covering of wound with bandage; (5) saturation of bandage with potassium permanganate solution; (6) liberal doses of whisky; (7) medical attention. He advocates the same measures for dog bite. Please let me know whether these instructions (regarding application of petroleum with iodin crystals, and the application of potassium permanganate solution) have any effect to retard the spreading of poison. Have they any value at all? Do you agree in sucking the wound? Could you suggest a better or a satisfactory immediate treatment?

V. P. BELL, M.D., Conway, S. C.

ANSWER.—The first indication in the treatment of snake bite is to prevent the absorption of the poison. This should be attained by application of a stasis bandage proximally to the bite for from twenty to thirty minutes. After this, it should be loosened gradually and for a short time at intervals so as to permit the most gradual absorption possible while maintaining sufficient circulation in the limb to avoid injury from constriction.

Sucking the wound is commonly the next thing recommended, and as the poison is relatively harmless to the unbroken mucous membrane, there can be no serious objection to it. It is better, however, to enlarge the wound by an X shaped incision about a quarter of an inch deep. Iodine, whether in the form of tincture or of petroleum solution, might be used as an antiseptic before incision, as well as for its destructive action on venom. The wound should now be made to bleed freely by squeezing and washing. For the destruction of the venom, potassium permanganate crystals rubbed into the wound and a 2 per cent solution of it injected into and around the wound are particularly recommended. To saturate the bandage with potassium permanganate solution may be likewise useful.

The third most important step is the injection of antivenom serum specific of the poison under treatment.

The time honored free libations of whisky even to the point of drunkenness is of doubtful value; and it is possible that some deaths after snake bite have to be ascribed to the reckless use of this "remedy." Stimulation by strychnine and by aromatic spirit of ammonia, if required, is more rational.

Most important is the prevention of snake bites by extermination of venomous snakes and protecting their natural enemies, as well as by wearing strong shoes and leather leggings when going through thickets and by refraining from handling snakes.

VAGINAL SMEARS AND SANITATION OF SWIMMING POOLS

To the Editor:—Kindly express your opinion as to the advisability or inadvisability of taking vaginal smears from applicants to the swimming pool of Y. W. C. A. organizations. State also reasons for your opinions. Please omit my name.

M.D., D. C.

ANSWER.—The routine taking of vaginal smears from women using swimming pools appears to be something of an open question. A number of colleges do it and it is probably advisable if one wishes to take every possible precaution. Seemingly there is no record of any infection from the gonococcus through the medium of swimming pools in this country. This organism is short lived in air or water.

EFFECTS OF MERCURIC CHLORIDE

To the Editor:—1. What is the shortest length of time between the taking of mercuric chloride as a poison and death? 2. What are the colors of the tissues after taking mercuric chloride? 3. What kind of a preservative is it? 4. Does it make any difference in what form it is taken?

F. F. BLAIR, M.D., Montgomery, Ala.

ANSWER.—1. Death from mercuric chloride poisoning may occur in half an hour from shock, but commonly life is prolonged for from two to four days, and it may last into the second week.

2. Some parts of the alimentary canal are sure to show inflammatory changes. Patches of congestion and erosion appear in the mouth, throat, stomach or intestines. The kidneys swell and become acutely inflamed.

3. It is used by taxidermists to preserve skins and mounted preparations.

4. Theoretically, mercuric chloride would be both more quickly and more surely fatal if ingested in solution. Actually, at the present time most of the tablets of mercuric chloride are made so that they will be quickly soluble. Practically, then, there is little difference whether the mercuric chloride is taken in solution or in tablet form.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD OF OTOLARYNGOLOGY, TEXAS: Dallas, April 19, CALIFORNIA: San Francisco, April 27. Sec., Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Mo.

ARKANSAS: Little Rock, May 11-12. Sec., Dr. J. W. Walker, Fayetteville. Homeo. Board, Little Rock, May 11. Sec., Dr. A. A. Pringle, Eureka Springs. Eclectic Board, Little Rock, May 11. Sec., Dr. Claude E. Laws, Fort Smith.

DISTRICT OF COLUMBIA: April 13. Sec., Dr. Edgar P. Copeland, 1801 Eye St., Washington, D. C.

GEORGIA: Atlanta, June 9-11; Augusta, June 1-3. Sec., Dr. C. T. Nolan, Marietta, Ga.

HAWAII: Honolulu, April 12-15. Sec., A. L. Davis, 1254 Emma Street, Honolulu.

NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, June 21-23; Part II, June 22-23. All applications should be made on or before May 15. Sec., Dr. J. S. Rodman, 1600 Walnut Street, Philadelphia.

NEVADA: Carson City, May 3. Sec., Dr. Simon L. Lee, Carson City.

NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. W. T. Joyner, Roswell.

North Dakota January Examination

Dr. G. M. Williamson, secretary of the North Dakota Board of Medical Examiners, reports the oral, written and practical examination held at Grand Forks, Jan. 5-8, 1926. The examination covered 13 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 10 candidates examined, 8 passed and 2 failed. Three were licensed by reciprocity and 1 by endorsement of credentials. The following colleges were represented:

PASSED	Year Grad.	Per Cent
Rush Medical College	(1925)	79
Harvard Medical College	(1923)	86
University of Minnesota Medical School	(1924) 81, (1925)	88
University of Manitoba Faculty of Medicine (1924) 76, 79, (1925) 83	(1921)	86,

FAILED	Year Grad.	Per Cent
University of Bonn, Germany	(1922)	66
University of Tomsk, Russia	(1915)*	65

LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Minnesota Medical School	(1906) (1914) (1925)	Minnesota

ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College	(1923)	N. B. M. Ex.

* Verification of graduation not completed by the American Medical Association.

Vermont February Examination

Dr. W. Scott Nay, secretary of the Vermont Board of Medical Examiners, reports the written examination held at Burlington, Feb. 9-11, 1926. The examination covered 12 subjects and included 90 questions. An average of 75 per cent was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

PASSED	Year Grad.	Per Cent
University of Vermont College of Medicine	(1925)	88
McGill University Faculty of Medicine (1924) 88.7, (1925) 85.1	(1919)	86.8,
University of Munich, Germany	(1924)	82.1

FAILED	Year Grad.	Per Cent
Comenian University of Bratislava, Czechoslovakia	(1922)	71.3

LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Louisville Medical College	(1904)	Washington
Boston University School of Medicine	(1890)	Illinois
Tufts College Medical School	(1903)	Mass.
Jefferson Medical College of Philadelphia (1924) Rhode Island	(1905)	Mass.

Book Notices

GYNECOLOGIC UROLOGY. By Lynn Lyle Fulkerson, A.B., M.D., F.A.C.S., Assistant Professor of Gynecology, New York Post-Graduate Medical School. Cloth. Price, $6. Pp. 247, with 166 illustrations. Philadelphia: P. Blakiston's Son & Co., 1925.

The preface states that the book is devoted to the technic of endoscopy and cystoscopy in the female, and the diagnosis and treatment of the more common diseases of the urologic tract, and suggests that the intention of writing it was to enable students to acquire quickly a working knowledge of the subject. This has been accomplished for the most part in a satisfactory manner. Many of the paragraphs are extremely brief but are not misleading. In several instances the expressions used are somewhat inaccurate; for example, on page 18 under the paragraph headed edema, the statement that "the term should be applied whenever the blood vessels have disappeared because of swelling" is, of course, not accurate. The recommendation "that the bladder should be irrigated at least once a day with warm saline or 4 per cent boric solution" in the treatment of acute cystitis (page 55) would probably not receive general approval. Again, on page 57, "If the cystitis does not respond to treatment and always if known pyelitis exists, the ureters should be catheterized every one to five days and kidney lavage with instillation of 5 cc. of 1 per cent silver nitrate done" seems an unduly vigorous method of treatment to recommend as a routine. The technic of cystoscopic examination is excellently explained. The recent work on nephritis and nephrosis is outlined in chapter VIII, and that on renal function tests in chapter X. The illustrations are partially original and are, for the most part, satisfactory; however, they do not all measure up to the standard set by the majority. The book as a whole contains a great deal of information in a brief form and will serve to stimulate the physician or surgeon who sees a large number of women patients to examine carefully the urinary tract in an intelligent manner. As a whole, the book is a good one for the student, and supplements the standard works in gynecology.

LES FONDEMENTS BIOLOGIQUES DE LA PSYCHOLOGIE. Par Jean Lhermitte, Professeur agrégé de psychiatrie à la Faculté de médecine de Paris. Paper. Price, 14 francs. Pp. 241, Paris: Gauthier-Villars et Cie, 1925.

In a brief introduction it is shown that even two thousand years ago the idea of considering the brain merely as a storehouse for images was held and discarded, and the realization expressed that to arrive at facts of sufficient solidarity to uphold theories one must go beyond introspection to anatomic, physiologic and clinical observation of the brain. A brief but adequate historical review brings the placement of psychic activity in the brain to date.

The work is divided into eight chapters: 1. The structure of the nerve cell and fiber; the nerve impulse, its nature and action in cell, fiber and brain. 2. The phylogenetic development of the nervous system. Subheads: stage of appearance of, general irritability, of specialized receptors, of reflexes, of intersegmental reflexes, of suprasegmental neurons. The results of suprathalamic and infrathalamic decerebration in fish, amphibians, reptiles, birds and mammalians. The complexity of structure and conduct in the mammalian makes categorical conclusions impossible. 3. Ontogenesis: the structure and physiology of the nervous system of the fetus and of the infant. The cortex plays little if any part in the life of the fetus; movement is of the order of the reflex. Flechsig's claim of centers of projection versus centers of association is denied, but insight into the relation of function to structure is gained as a result of Flechsig's work. As the relations in the brain become more complex, conduct becomes less uniform and reflex and more individual. Anencephaly in man shows failure of development with more striking lack of function than does decerebration in dog and monkey; hence the greater relative importance of the cortex in man. 4. The structure and physiology of the cortex and corpus striatum. The relations of the midbrain to the sympathetic system and of the cortex to vegetative life. 5. The known relations between physical manifestations of emotions and brain anatomy: optic thalamus, lenticular nucleus and bulbopontile nuclei. There are cortical centers for emotions also. If cortical control is lost, emotion is expressed irrespective of thought; when the thalamus is cut off from the lower centers there is no outward expression of emotion. 6. Disturbances of language: comprehension and expression (exclusive of pure motor failure). Aphasia: of reception (sensory), of expression (motor), global. Word deafness, word blindness, pure motor aphasia and agraphia. Aphasia is not a destruction of brain entities: images of words, but rather of "l'intelligence" of the language. Verbal images are not static but dynamic. Musical language: tone and rhythm more primitive than articulated words; hence may persist though the latter are destroyed. Amusia, like aphasia, presents a variety of pictures. The assumption that the differences are due to focal distructions of different areas seems rather forced. 7. Center for the regulation of the states of waking and sleeping ventral to the third ventricle and extending downward below the aqueduct of Sylvius. This center is susceptible to the secretions of the endocrine system and also to cortical impulses. The relation of thinking to states of sleeping and waking: thinking not a matter of exclusive cortical activity. 8. Regulating center of activity of thought and psychomotor expression in the parencephalon.

This is an eminently serviceable book. There is a satisfactory absence of explanations of abstractions by the use of further abstractions. The anatomic and physiologic statements are nicely correlated and the direction of further moves of inquiry clearly indicated. Some such work as this should be a part of the equipment of every student of medicine.

THE CLINICAL STUDY AND TREATMENT OF SICK CHILDREN. By John Thomson, M.D., LL.D., F.R.C.P., Consulting Physician to the Royal Edinburgh Hospital for Sick Children. Fourth edition. Cloth. Price, 30 shillings net. Pp. 912, with 258 illustrations. Edinburgh: Oliver and Boyd, 1925.

The usefulness of this book has been greatly enhanced in this edition. Much material of value and interest has been added. New sections have been introduced on the home care of blind, deaf and crippled children, exudative diathesis, and erythredema, as well as a discussion of minor subjects such as cephalic bruits, pyknolepsy and hypertelorism, recently described by Grieg. Throughout, little is said about pathology, so that the author has been able to devote more space to clinical methods, symptoms and descriptions of those diseases which are peculiar to children and show characteristic symptoms when they occur in early life. A valuable feature of the text lies in the references given to the papers in the periodical literature, from which the author has drawn many facts and suggestions. The portions on the examination of the child, the skin, the nervous system, and the functional nervous disorders are well written and very complete. The chapter on the teeth is exceptionally inclusive for a book of this type. On the other hand, little mention is made of the acute infectious diseases of childhood, including the exanthems, except for a page or two in the appendix devoted to the consideration of the periods of incubation. On the whole, the practitioner as well as the student will find much information of interest in this book.

DAS AUGENZITTERN ALS GEHIRNSTRAHLUNG. Ein Atlas der Augenzitternkurven. Von Prof. Dr. Johannes Ohm, Augenarzt in Bottrop. Paper. Price, 21 marks. Pp. 326, with 266 illustrations. Berlin: Urban & Schwarzenberg, 1925.

A highly technical scientific book that starts with a quotation from Goethe and closes with a measure of the Fifth Symphony of Beethoven is somewhat unusual. The motif of the book is introduced poetically: "In the darkest castle of the Westphalian earth lie inflammable stones that represent the remains of majestic prehistoric forests, grown under the rays of a tropical sun. Recovery of the stones is accompanied by death, mutilation and manifold diseases, among the most peculiar of which is the miner's nystagmus." This motif is elaborated in the woodwinds by an analysis of the graphic curves of some 150 cases of nystagmus, recorded with the different instruments that have been developed by the author.

A subdivision of the thema shows three main types of nystagmus:

A. Reflex nystagmus.
   1. Optical source.
   2. Vestibular source.
   3. Sensory source.
B. Central nystagmus.
   1. From the region of Deiters' nucleus.
   2. From the central optic radiations.
   3. From the cortical motor centers.
C. Nystagmus retractorius and protractorius.

The divisions of the thema are worked over in extenso and then reassembled in a fairly brief recapitulation. The concerto closes with an elaborate coda in the usual form. For one vitally interested in nystagmus, the book contains a wealth of information, both original and bibliographic. But for one whose interests lie in other directions, the book must be classed as an excellent soporific, far superior to the time-honored method of counting sheep.

EARS AND THE MAN. Studies in Social Work for the Deafened. By Annetta W. Peck, Estelle E. Samuelson and Ann Lehman. With an introduction by Wendell C. Phillips, M.D., President-Elect of the American Medical Association. Cloth. Price, $2 net. Pp. 217. Philadelphia: F. A. Davis Company, 1926.

The three authoresses, themselves deaf, are, according to Dr. Phillips, the first of their profession to enter the new field of social work for the deafened. Their full sympathy therefore goes to those unfortunately afflicted with defective hearing. They consider the different aids offered the hard of hearing, not only from a social standpoint, but also from that of their economic struggle. For the hard of hearing, the reading of this book will bring much information and encouragement. To those who are desirous of helping the unfortunate deaf, it will offer many suggestions and much information.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

THE EVOLUTION OF ORTHOPAEDIC SURGERY. By Robert Bayley Osgood, A.B., M.D., John B. and Buckminster Brown Professor of Orthopaedic Surgery in Harvard University. First Detroit Orthopaedic Lecture. Auspices of the Wayne County Medical Society, Detroit, Michigan. March 16, 1925. Cloth. Pp. 70, with 49 illustrations. St. Louis: C. V. Mosby Company, 1925.

Beautifully prepared history of orthopedic surgery, based on biographic method.

DIE CHIRURGIE. Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Lieferung 6, IV. Band. Die Chirurgie der Mundhöhle, der Speicheldrüsen und des Rachens. Von Prof. Dr. F. Brüning. Die Chirurgie des Kehlkopfes und der Luftröhre. Von Prof. Dr. J. Soerensen. Paper. Pp. 358, with illustrations. Berlin: Urban & Schwarzenberg, 1925.

Additional part of new German system of surgery.

LA PRATIQUE DES DÉVIATIONS VERTÉBRALES: (SCOLIOSE—CYPHOSE—LORDOSE). Par Carle Roederer, Assistant d'orthopédie a l'Hôpital Saint-Louis, et René Ledent, Directeur des cours d'éducation physique à Liége. Paper. Price, 42 francs net. Pp. 376, with 215 illustrations. Paris: G. Doin & Cie, 1926.

An orthopedic consideration of spinal curvatures, printed shabbily on miserable paper.

ÉLÉMENTS DE MICROBIOLOGIE GÉNÉRALE ET D'IMMUNOLOGIE. Morphologie et physiologie des microbes pathologie générale des infections microbiennes. Par M. Nicolle, Professeur a l'Institut Pasteur. Second edition reviewed by A. Boquet. Paper. Price, 35 franes net. Pp. 358. Paris: G. Doin & Cie, 1926.

A French textbook poorly printed and without illustrations.

INDIVIDUAL GYMNASTICS. A Handbook of Corrective and Remedial Gymnastics. By Lillian Curtis Drew, Director of Department of Corrective Gymnastics, Central Branch Y. W. C. A., New York City. Third edition. Cloth. Price, $2.25. Pp. 276, with 121 illustrations. Philadelphia: Lea & Febiger, 1926.

Popular manual by well trained and experienced teacher.

HYSTERIA. By Ernst Kretschmer, M. D., A. O. Professor of Neurology and Psychiatry in Tübingen. Translated by Oswald H. Boltz, M.D., Senior Assistant Physician in the Manhattan State Hospital in New York City. Nervous and Mental Disease Monograph Series, No. 44. Pp. 120. New York: Nervous & Mental Disease Publishing Company, 1926.

Study of whole subject, attempting to correlate work of Kraepelin and of Freud.

THE NEMATODE PARASITES OF VERTEBRATES. By Warrington Yorke, M.D., Professor of Parasitology, University of Liverpool and Liverpool School of Tropical Medicine, and P. A. Maplestone, M.D., D.S.O. With a foreword by C. W. Stiles, Professor of Zoology, United States Public Health Service. Cloth. Price, $9. Pp. 536, with 307 illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

Technical work for special students and experts.

THE NATURAL INCREASE OF MANKIND. By J. Shirley Sweeney, M.A., M.D., D.Sc. Cloth. Price, $4. Pp. 185. Baltimore: Williams & Wilkins Company, 1926.

Scientific consideration of birth rates, with a hopeful outlook for birth control, recognizing the existence of differential fertility.

INDIGESTION: WHAT IT IS AND HOW TO PREVENT IT. By Arthur L. Holland, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical College. Cloth. Price, $1.25. Pp. 130, with 12 illustrations. New York: D. Appleton & Co., 1926.

Popular treatise, well written and, like few others in its field, free from faddism.

PRÉCIS DE BACTÉRIOLOGIE PRATIQUE. Par Jules Courtmont, Professeur d'hygiéne à la Faculté de médecine de Lyon, Médecin des hôpitaux. Fifth edition by Paul Courtmont. Cloth. Price, 85 francs. Pp. 1259, with illustrations. Paris: G. Doin & Cie, 1926.

Well illustrated but poorly printed popular French textbook of bacteriology.

DIE URSACHE DES CARCINOMS. Von Prof. R. P. Van Calcar. Aus dem bacteriologisch-hygienischen Laboratorium der Universität Leiden. Paper. Pp. 66, with 45 illustrations. Leiden: S. C. Van Doesburgh, 1926.

General consideration of the causes of cancer, leading to no practical conclusion.

A MANUAL OF CLINICAL LABORATORY METHODS. By Clyde Lottridge Cummer, Ph.B., M.D., Associate Professor of Clinical Pathology, School of Medicine, Western Reserve University. Second edition. Cloth. Price, $6.50. Pp. 547, with 181 illustrations. Philadelphia: Lea & Febiger, 1926.

New edition brought quite up to date.

DAS WACHSTUM DES KINDES. Von Prof. Dr. Eugen Schlesinger, Städtischer Fürsorgearzt in Frankfurt a. M. Paper. Price, 6 marks. Pp. 128, with 8 illustrations. Berlin: Julius Springer, 1926.

Studies of height and weight of children, and various influences affecting them.

THE HISTORY OF SMALL-POX IN AUSTRALIA, 1909-1923. By J. H. L. Cumpston, M.D., D.P.H., Director-General of Health and Director of Quarantine, and F. McCallum, M.B., B.S., D.P.H., Quarantine Officer, Commonwealth Department of Health. Commonwealth of Australia Department of Health. Service Publication No. 29. Paper. Pp. 243. Melbourne, 1925.

AN INVESTIGATION INTO THE STATISTICS OF CANCER IN DIFFERENT TRADES AND PROFESSIONS. By Matthew Young, M.D., and W. T. Russell, with the collaboration of John Brownlee, M.D., D.S., and E. L. Collis, M.D. Medical Research Council. Special Report Series, No. 99. Paper. Price, 1 shilling, 6 pence net. Pp. 50. London, 1926.

A CHOLESTERINEMIA E SUAS RELAÇÕES COM A LEUCOCYTOSE (Cadeira de Clinica Medica). Por Dr. Carlos Bento. These apresentada á Faculdade de Medicina de Porto Alegre em 30 de Novembro de 1925 e defendida em 23 de Dezembro do mesmo anno. Pp. 98 with illustrations. Porto Alegre, 1925.

CANCER MORTALITY IN AUSTRALIA. A Statistical Study, 1925. By M. J. Holmes, D.S.O., M.B., D.P.H., Commonwealth Department of Health. Commonwealth of Australia, Department of Health. Service Publication No. 30. Paper. Pp. 101, with 15 charts. Melbourne, 1925.

BOARD OF HEALTH OF THE TERRITORY OF HAWAII, BUREAU OF VITAL STATISTICS. Report of the Registrar General, for the year ended June 30, 1925.

THE ROCKEFELLER FOUNDATION. INTERNATIONAL HEALTH BOARD. Eleventh annual report, January 1, 1924-December 31, 1924. New York, 1925.

ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MARYLAND FOR THE YEAR ENDING DECEMBER 31, 1922. Baltimore, 1926.

JAHRESBERICHT DER ABTEILUNG VOLKSWOHLFAHRT UND LANDWIRTSCHAFT DER REGIERUNGSKOMMISSION DES SAARGEBIETES. 1924.

Miscellany

NEW WORK ON VITAMINS

At the London Royal Society of Medicine, some new work on vitamins with important practical applications has recently been described by Prof. R. H. A. Plimmer, who discussed the relation of the quantity of vitamin B to the quantity of food. He described experiments conduced to determine how much vitamin B was needed to maintain health, and how this quantity was affected by alterations in the total quantity of fats, carbohydrates and proteins in the diet. Chickens were fed on a diet of rice and fish meal with cod liver oil and yeast extract as the sources of vitamins A and B, respectively. It was found that 8.6 per cent of yeast extract was needed to maintain health on a basal diet containing 5 parts of fish meal, but that when the protein in the diet was increased by raising the fish meal to 30 parts, deficiency symptoms appeared, the most striking of which were deficient bone formation and bow legs. These and other similar experiments proved that, when the protein of the diet was increased, the vitamin B supply also needed to be increased to maintain health. There were differences in the vitamin B requirements of animals. The amount of yeast extract needed in the diet by different animals was, approximately: fowls, 12 per cent; pigeons, 8 per cent; rats, 4 per cent; cats, more than 4 per cent. These figures suggested that man probably required a vitamin B supply equivalent to about 8 per cent of yeast extract in the diet, and showed that the vitamin requirement of an individual had a constant ratio to the total food taken. One of the chief effects of a partial deficiency of vitamin B was intestinal stasis, which resulted in retention of putrid food residues and absorption of products of putrefaction. McCarrison had noted this intestinal effect as a preliminary stage in the production of polyneuritis in pigeons deprived completely of vitamin B. In the experiments described in which there was only partial lack of vitamin B, this stage, which was only a temporary one in the acute experiments, became a chronic condition. Professor Plimmer thought that the fundamental effect of lack of vitamin B was to reduce atony of the intestine, and that polyneuritis was possibly due to absorption of some toxic products of putrefaction. These experiments raised the question as to whether the supply of vitamin B in normal human diets was adequate. He suggested that the ordinary daily diet was seriously deficient in vitamin B, but that the tendency to intestinal atony thus produced was counteracted to some extent by the widespread use of purgatives.

Prof. J. C. Drummond described new facts concerning fat soluble vitamins. The growth promoting fat soluble vitamin A was identified by McCollum in 1913. In 1919, Mellanby showed that the lack of a fat soluble factor was concerned with the production of rickets, and in 1922 McCollum brought forward proof that this antirachitic factor, now called vitamin D, was not vitamin A. Evans, during the last few years, had shown that there was a third fat soluble factor (vitamin E) necessary for reproduction. Professor Drummond said that the vitamins were not mere hypothetic substances, nor even bodies of completely unknown chemical structure, such as the bacterial toxins, but substances concerning whose chemical nature a good deal was already known. He described the fractionation of cod liver oil, and showed that the whole of the fat soluble vitamins were contained in the 1 per cent of nonsaponifiable matter in the oil. Half of the active residue was cholesterol and was inactive. Fractional distillation of the remainder under low pressures showed that the whole of the active portion was contained in the fraction boiling between 180 and 200 C., at a pressure of from 1 to 2 mm. of mercury. This active fraction consisted largely of an unsaturated alcohol. The daily dose of the most active fraction was only 0.002 mg. for a 100 Gm. rat. The recent work on the production of the antirachitic vitamin by ultraviolet rays gave much information as to the chemical nature of the antirachitic vitamin D. The discovery of Steenbock that irradiation of food produced vitamin D had led to the discovery that only oils and fats could thus be activated, and next that only the unsaponifiable matter in fats could be activated. Finally, it was shown that the exposure of chemically pure cholesterol to ultraviolet rays caused the formation of vitamin D. Prolonged exposure of cholesterol to ultraviolet rays produced a semi-solid, waxy material with an intense antirachitic action. This meant that one of the vitamins had been synthesized.

MAN AND THE GREAT APES

At the Royal College of Surgeons, in London, Sir Arthur Keith recently discussed the bearings of the fossil skull discovered near Taungs, South Africa, on current views concerning the origin of man and the ape. He said it was now certain that the skull was that of a young anthropoid ape, cousin to the two existing African anthropoid apes—the gorilla and the chimpanzee. The view originally held by Dart that the discovery had revealed an extinct family of beings which occupied a position intermediate between anthropoids and humanity could no longer be maintained. The geological evidence showed that the skull had been entombed in a limestone bluff during the Pleistocene period, at which time the earlier forms of mankind had already been evolved in other parts of the world. The discovery was important for the light it threw, not on the evolution of man, but on the history of man's nearest living relatives, the great anthropoids of Africa. Hitherto our knowledge of extinct anthropoids had had to be based on fossil fragments of a jaw or on isolated teeth, but in the present instance we had details of face, nose, teeth, skull, and even certain features of the brain. It shared some characters with the chimpanzee, others with the gorilla, while others were peculiar to itself. In size of brain the Taungs anthropoid stood above chimpanzees of its own age, but below gorillas in the fourth year of age, the age reached by the Taungs ape. This fossil ape had a narrow, long brain and head. All living anthropoids had relatively wide brains and heads tending toward roundness, save among gorillas, among which long-headed or dolichocephalic individuals did occur occasionally. Thus, the discovery at Taungs showed that among anthropoid apes there was, just as among human beings, a tendency to the production of dolichocephalic races and brachycephalic races. Changes due to age were most pronounced and brutal in the gorilla. In its cousin, the chimpanzee, there was a tendency to retain the characters of youth. This tendency to carry youthful characters into adult life had played a large part in the evolution of human races. The same tendency was seen in many features of the Taungs skull. Yet that it was destined to pass through stages which would lead on to the full structural status of the anthropoid there could be no doubt. At the time of death its first permanent molar teeth were just cutting the gums. Although the milk teeth were small—as was also the case in young gorillas—the permanent teeth were large. They were much larger than in the chimpanzee, and almost as large as those found in the gorilla. In size of jaw, the Taungs ape must have exceeded the chimpanzee.

The discovery at Taungs threw light on the climate and flora of South Africa during the Pleistocene period. Although baboons could still extract a subsistence on the dry and arid sweeps of Bechuanaland, one could not conceive of anthropoids doing so. The climate need not have been tropical, for the Kivu gorilla, although living near the equator,

withstood the wet and cold encountered at an elevation of 10,000 feet. In the Pleistocene period, anthropoid apes extended 2,000 miles farther south in Africa than they did today. We might safely presume that the green and verdant belt of Africa extended an equal distance farther south than it now did, for there was no feature in the Taungs skull which suggested that the manner in which its owner walked and climbed was different from that of the gorilla.

Medicolegal

Skill and Care Required of Surgeons—Evidence

(Bungardt v. Younger (Okla.), 239 Pac. R. 469)

The Supreme Court of Oklahoma, in affirming a judgment in favor of plaintiff Younger, says that, according to his evidence, he was taken to the defendant's hospital to be treated for a broken leg. The tibia was set, a plaster cast applied, and a roentgenogram taken which showed that bone properly set. Shortly afterward the plaintiff began suffering intensely from constant pain near the ankle. He and his parents called the defendant's attention to it and suggested their belief that the fibula also was broken. The defendant assured them it was not. About three weeks after the cast was put on the defendant removed it, made an examination, and pronounced the leg all right. The next day, on further insistence by the parents, the defendant said that another roentgenogram would be taken, which was done. It showed the fibula broken near the ankle, ends overlapping, and the tibia out of apposition. The defendant said that the tibia would have to be rebroken and both bones reset, and advised the application of a Lane plate to the fracture of the tibia. The operation was performed and the leg again placed in a cast. Roentgenograms subsequently taken showed that after this operation bone absorption commenced in the broken ends of the tibia, resulting in nonunion, weakness and deformity. The plaintiff also proved by several witnesses certain declarations against interest which were said to have been made by the defendant between the time of the first setting of the tibia and that of the Lane-plate operation. The court does not think that there was such a lack of evidence of want of ordinary care and attention as would make the overruling of the defendant's demurrer to the plaintiff's evidence reversible error.

Generally the skill required of surgeons in performing an operation is ordinary skill, and the care required of them in the subsequent treatment of the patient is ordinary care. In actions for negligence in cases of this character, the plaintiff has the burden of proving want of ordinary skill in the performance of the operation or want of ordinary care in the subsequent treatment, and nonsuccess or unsatisfactory results of the operation will not alone establish the essential elements of legal detriment. However, where there is evidence of facts attending the operation or the subsequent treatment which in the ordinary affairs of life would bear a causal relation to the demonstrated result, and those facts are of such a nature as to be comprehensible and understandable to laymen of ordinary intelligence, the probative value of such evidence and the causal relation of such facts to the alleged legal detriment are questions of fact for determination by a jury under proper instructions. In such a case, where expert evidence is required to make out a cause of action, and there is evidence of declarations against interest proved to have been made by the defendant, himself an expert and assuming to treat the plaintiff with ordinary skill and care, which, with all the other facts and circumstances in evidence, tends to show a want of ordinary skill and care in such treatment and to show a causal relation of such want of skill and care with the resultant detriment complained of, such evidence is sufficient, as against a demurrer thereto, to entitle the plaintiff to go to the jury.

Negligence is not predicable on the nonsuccess of a surgical operation when reasonable skill and ordinary care are exercised in its performance, nor is negligence predicable on error of judgment in the method of treatment when ordinary care and intelligence direct such judgment. But if, in the exercise of reasonable skill and ordinary care, it ought to be discovered that an injury or ailment does not yield to the usual and approved method of treatment, the failure to discover this fact, or, if discovered, a failure to acquaint the patient with that fact, will constitute negligence.

Ordinary care is defined by the Oklahoma statute to be such care as persons of ordinary prudence usually exercise about their own affairs of ordinary importance. A want of ordinary care constitutes negligence. Of course, this character of negligence or want of ordinary care cannot be predicated on results obtained, because in that event recovery would be based purely on speculation and conjecture rather than on facts in evidence. A jury would be required to reason backward from the demonstrated result and reach a conclusion as to the causes contributing thereto, which would necessarily be theoretical. But when there is evidence of facts which a jury may grasp and understand and apply thereto a common knowledge and intelligence, the case presented is one of fact and a recovery is not based on speculation and conjecture.

Ordering of Physical Examination of Plaintiff

(Cook v. Miller (Conn.), 130 Atl. R. 571)

The Supreme Court of Errors of Connecticut says that the order of the trial court for an examination of the person of the plaintiff was a proper exercise of discretion. The discretionary right to make such an order would seem to flow legitimately from the right of a defendant to call an injured plaintiff as a witness and compel his testimony as to his injuries, or to cross-examine him relative thereto, if he testifies in his own behalf. While in a large number of states this matter is one of statutory regulation, in the states where no such regulation obtains the decided preponderance of authority favors the right of the trier in his discretion to make such an order. However, in view of the fact that the jury found for the defendant, and the only bearing that a physical examination could have had was as to the amount of damages, if error in this regard had been committed, it would have been harmless.

Issuance and Filling of Prescriptions for Narcotics

(Eckert v. United States (U. S.), 7 Fed. R. (2d) 257)

The United States Circuit Court of Appeals, Eighth Circuit, in reversing a judgment of conviction of defendant Eckert, says that he was a druggist who had registered with the collector of internal revenue as a dealer in the drugs sold. The prosecution took the broad stand that he had violated the Harrison Narcotic Act and was subject to punishment because of the large amount of drugs in the aggregate which he had sold on prescriptions within a given time—approximately the first six months of 1920, during which prescriptions filled by him totaled 228 ounces of morphine and 75 ounces of cocaine, whereas it was testified by a narcotic agent that this far exceeded the average sold by a druggist within the city of St. Louis during that time.

The trial court in its instructions to the jury accepted the theory of the prosecution and charged that the proof as to the great number of prescriptions filled by the defendant during the time selected and the total amount of drugs sold by him in filling them was for the purpose of enabling the jury to reach a conclusion on the question of the defendant's good faith, and that, if when he filled them he knew they had not been issued by the physican in good faith and in the course of the latter's professional practice only, he nevertheless filled them and gave the drugs called for therein to the parties named, the jury would be warranted in finding the defendant guilty; that if a physician issues a prescription in good faith to cure a patient or to alleviate the suffering of the patient, then the druggist has a right to fill it, but that if a physician issues a prescription not with good intent and not in good faith to effect a cure or to alleviate the suffering of the patient, but for purposes of gratifying the appetite of that patient, then such a paper cannot be called a prescrip-

tion, and that if a druggist knew the prescription had been issued in that way he would violate the act in filling it.

The circuit court of appeals thinks that the theory on which the case was tried and submitted to the jury was untenable, because not within the definition of any of the crimes denounced by the act. It does not place on the druggist the burden of inquiry into the intent and purpose of the physician in issuing the prescriptions; to the contrary, it expressly authorizes the druggist to sell on prescriptions issued by registered physicians. The law leaves entirely with the physician the responsibility as to when, under what conditions, and for what purposes he will issue a prescription for the drug. Responsibility for the issuance of prescriptions is placed on the physician, not the druggist; when brought to the latter to be filled, they are his protection.

Nonliability of Head of Roentgen-Ray Department

(Withington v. Jennings (Mass.), 149 N. E. R. 201)

The Supreme Judicial Court of Massachusetts, in overruling exceptions to a verdict directed for the defendant, says that the plaintiff, by the advice of her family physician, in 1921 went to a hospital which was a charitable institution to have her tonsils removed by the roentgen-ray method. At the hospital she was introduced to the technician who was employed by the hospital for roentgen-ray work. While administering the third treatment he neglected to use a filter, and as a result the plaintiff suffered an injury for which damages were claimed. The defendant was employed by the hospital; he was in charge of the roentgen-ray department, and received for his services one half of the fees paid to the hospital for roentgen-ray work. He was not consulted by the plaintiff and she did not see him at any of her visits to the hospital. He testified that he specialized in roentgen-ray work; that he prescribed roentgen-ray treatments but did not administer them or take roentgenograms; that this work was done at the hospital by the technician, who was a third-year medical student, employed by the hospital to do this and other work; that he gave the technician directions for the roentgen-ray treatment of tonsils; that the state of the art as "practiced in the community in 1921 called for a standardized dosage without examination by him of the patient"; that it was not customary for physicians to administer roentgen-ray treatments or take roentgen-ray pictures; that this work was customarily done by persons having experience in using the roentgen-ray machine; and that he understood that the technician had considerable experience in this work before coming to the hospital.

The technician was not employed by the defendant; he was not the defendant's agent or servant. They were fellow employees of the hospital. The defendant was not responsible for the neglect of the technician in administering the treatment, which was entirely in his control. The evidence did not show that any negligent act of the defendant contributed to the plaintiff's damage; he did not participate in the operation, and was not liable for her injury. The verdict was directed for the defendant properly. The evidence offered by the plaintiff, and excluded by the trial judge, that the defendant's high reputation as a roentgen-ray expert influenced her decision to take the roentgen-ray treatments in his department, was not material and was rightly excluded.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Dallas, April 19-23. Dr. Olin West, 535 N. Dearborn Street, Chicago, Secretary.

Alabama, Medical Association of the State of, Mobile, April 27-30. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Assistant Secretary.

American Association for the Study of Allergy, Dallas, April 20. Dr. A. H. Rowe, 242 Moss Avenue, Oakland, Calif., Secretary.

American Association of Genito-Urinary Surgeons, Hot Springs, Va., May 10-12. Dr. H. G. Bugbee, 40 E. 41st Street, New York, Secretary.

American Association of Industrial Physicians and Surgeons, Philadelphia, May 24-26. Dr. F. L. Rector, 22 East Ontario Street, Chicago, Secretary.

American Bronchoscopic Society, Montreal, Canada, May 29. Dr. Henry B. Orton, 671 Broad Street, Newark, N. J., Secretary.

American Child Health Association, Atlantic City, May 17-22. Dr. S. J. Crumbine, 370 7th Ave., New York City, Secretary.

American Dermatological Association, Niagara Falls, Canada, May 27-29. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.

American Gastro-Enterological Association, Atlantic City, May 3-4. Dr. John Bryant, 338 Marlborough Street, Boston, Secretary.

American Gynecological Society, Stockbridge, Mass., May 20-22. Dr. A. H. Curtis, 104 S. Michigan Ave., Chicago, Secretary.

American Laryngological Association, Montreal, Canada, June 3-5. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.

American Laryngological, Rhinological, and Otological Society, Montreal, Canada, May 31-June 2. Dr. Robert L. Loughran, 145 West 58th Street, New York, Secretary.

American Neurological Association, Atlantic City, June 1-3. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.

American Orthopedic Association, Atlanta, April 26-28. Dr. De Forest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.

American Otological Society, Montreal, Canada, May 31-June 3. Dr. Harold Walker, 390 Commonwealth Avenue, Boston, Secretary.

American Pediatric Society, Niagara Falls, Canada, May 31-June 2. Dr. Howard Childs Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Proctologic Society, Indianapolis, April 16-17. Dr. William A. Rolfe, 331 Beacon Street, Boston, Secretary.

American Roentgen Ray Society, Detroit, May 18-22. Dr. C. L. Martin, Baylor Hospital, Dallas, Texas, Secretary.

American Society of Clinical Investigation, Atlantic City, May 3. Dr. J. H. Austin, University of Pennsylvania, Philadelphia, Secretary.

American Society of Clinical Pathologists, Dallas, April 15-17. Dr. Ward T. Burdick, Metropolitan Building, Denver, Colo., Secretary.

American Surgical Association, Detroit, May 24-26. Dr. R. B. Greenough, 8 Marlborough Street, Boston, Secretary.

American Urological Association, Boston, May 17-19. Dr. H. G. Hamer, 723 Hume-Mansur Building, Indianapolis, Ind., Secretary.

Arizona Medical Association, Globe, April 25-27. Dr. D. F. Harbridge, 407 Goodrich Building, Phoenix, Secretary.

Arkansas Medical Society, Hot Springs, May 18-20. Dr. W. R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Association for the Study of Internal Secretions, Dallas, April 20. Dr. F. M. Pottenger, Title Insurance Building, Los Angeles, Secretary.

Association of American Physicians, Atlantic City, May 4-5. Dr. F. W. Peabody, Boston City Hospital, Boston, Secretary.

California Medical Association, Oakland, April 26-May 1. Dr. Emma W. Pope, 593 Market Street, San Francisco, Secretary.

Conference of State and Provincial Health Authorities, Atlantic City, N. J., May 21-22. Dr. Richard M. Olin, State Commissioner of Health, Lansing, Mich., Secretary.

Connecticut State Medical Society, New Haven, May 19-20. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Florida Medical Association, Gainesville, May 3-5. Dr. Shaler Richardson, 111 W. Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Albany, May 12-15. Dr. A. H. Bunce, 65 Forrest Avenue, Atlanta, Secretary.

Hawaii Territorial Medical Association, Honolulu, April 25-28. Dr. F. J. Pinkerton, 46 Young Building, Honolulu, Secretary.

Illinois State Medical Society, Champaign, May 18-20. Dr. H. M. Camp, Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Des Moines, May 12-14. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 4-6. Dr. J. F. Hassig, 804 Elks Building, Kansas City, Secretary.

Louisiana State Medical Society, Monroe, April 15-17. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 27-29. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore, Secretary.

Medical Women's National Association, Dallas, April 18-19. Dr. Lena K. Sadler, 533 Diversey Parkway, Chicago, Secretary.

Minnesota State Medical Association, St. Paul, May 17-19. Dr. E. A. Meyerding, 11 W. Summit Avenue, St. Paul, Secretary.

Mississippi State Medical Association, Jackson, May 11-13. Dr. T. M. Dye, McWilliams Building, Clarksdale, Secretary.

Missouri State Medical Association, St. Louis, May 17-20. Dr. E. J. Goodwin, 901 Missouri Building, St. Louis, Secretary.

Nebraska State Medical Association, Omaha, May 11-13. Dr. R. B. Adams, McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Concord, May 25-26. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Mexico Medical Society, Albuquerque, May 19-21. Dr. C. M. Yater, 310 N. Richardson Avenue, Roswell, Secretary.

North Dakota State Medical Association, Minot, May 25-26. Dr. A. J. McCannell, Minot, Secretary.

Ohio State Medical Association, Toledo, May 11-13. Mr. Don K. Martin, 131 E. State Street, Columbus, Executive Secretary.

Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.

South Dakota State Medical Association, Aberdeen, May 19-20. Dr. John F. D. Cook, Langford, Secretary.

Tennessee State Medical Association, Memphis, May 11-13. Dr. J. F. Gallagher, Jackson Building, Nashville, Secretary.

Texas, State Medical Association of, Houston, May 24-27. Dr. Holman Taylor, 207½ West 11th Street, Fort Worth, Secretary.

Utah State Medical Association, Salt Lake City, May 6-8. Dr. F. B. Steele, Boston Building, Salt Lake City, Secretary.

West Virginia State Medical Association, Morgantown, May 25-27. Mr. S. O. Neale, 211 Smallridge Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

171: 1-156 (Jan.) 1926

*Endocrine Influence on Metabolism. W. B. Cannon, Boston.—p. 1.
*Effect of Roentgen-Ray Irradiation on Red Blood Cell Production in Cancer and Leukemia. R. Isaacs, Boston.—p. 20.
*Association of Diabetes Insipidus with Osteitis Fibrosa Polycystica. J. D. Heard, F. L. Schumacher and W. B. Gordon, Pittsburgh.—p. 38.
Human Cerebrospinal Fluid in System and Diffuse Degenerative Disease Involving Nervous System. C. A. Patten, Philadelphia.—p. 48.
*Electrocardiogram in Myxedema. C. Thacher and P. D. White, Boston. —p. 61.
Megacolon: Résumé of Literature; Case; Ramisection Proposed as Form of Treatment. H. J. Bartle, Philadelphia.—p. 67.
*Treatment of Abscess of Lung. J. A. Miller and A. V. S. Lambert, New York.—p. 81.
*Bacterial Vaccines in Asthma. G. T. Brown, Washington, D. C.—p. 94.
Mechanism of Flow of Bile from Liver Into Intestines. A. Winkelstein and P. W. Aschner, New York.—p. 104.
*Blood Pressure Lowering Principle in Seed of Watermelon (Cucurbita Citrullus). I. S. Barksdale, Charleston, S. C.—p. 111.

Endocrine Influence on Metabolism.—In Cannon's opinion an attempt at present to develop an elaborate and intricate conception of the interrelations of the endocrine glands would be altogether premature and might be quite misleading. The necessary factors are not at hand. But the idea that endocrine factors play an important rôle in establishing and maintaining physiologic equilibriums is reasonable and moderate in its scope, and does not involve a far reaching projection of theory into the unknown.

Effect of Roentgen-Ray Irradiation on Red Blood Cell Production in Cancer and Leukemia.—From the evidence of the effect of irradiation on young red blood cells, Isaacs thinks that all roentgen-ray irradiation may be considered as stimulative. Small doses may stimulate to division, large doses may stimulate maturity and, hence, death from senility, the rate for each tissue varying with its specific growth properties. Cases of cancer and leukemia, in which the increase in granule red corpuscles after irradiation is significant and sustained (two or more days), show a definite clinical improvement, and no leukopenia develops. In those cases in which there is no evident increase in the granule red corpuscles after irradiation, there is usually no clinical improvement in the irradiated lesion. If the increase is temporary (twenty-four hours or less), and is followed by an abrupt decrease, the results are those of too much irradiation, a leukopenia develops, and the patient may become worse clinically.

Association of Diabetes Insipidus with Osteitis Fibrosa Polycystica.—A case is reported by Heard, Schumacher and Gordon, in which occurred the exceedingly rare association of osteitis fibrosa polycystica with diabetes insipidus. The generalized bone disease followed local trauma to the skull. The polydypsia and polyuria did not appear until the osteitis fibrosa was well advanced.

Electrocardiogram in Myxedema.—Fourteen cases of myxedema, studied by Thacher and White, showed consistenly a low T wave in lead II before treatment with increase in positive amplitude after treatment. Thus, there is a distinct parallelism between the T wave of the electrocardiogram and the basal metabolic rate in hypothyroidism. In addition, there is a general decrease in potential of all electrocardiographic deflections in all leads in myxedema, with increase after treatment. This same so-called "low potential" in all leads is also found in myocardial exhaustion due to serious coronary sclerosis. This fact is evidence that the heart action is sluggish during myxedema, in accord with the recent finding of Einthoven that the electrical and mechanical expressions of muscular activity are not only synchronous but also tend to be parallel in degree. The T wave in lead II may also be lowered by digitalis; but the "digitalis T" is somewhat different from the "myxedema T" or the "myocardial weakness T," the deflection being more often diphasic, particularly with the S-T interval inverted.

Treatment of Abscess of Lung.—Miller and Lambert aver that the successful treatment of cases of abscess of the lung is materially aided by their joint management by internist and surgeon, with the close cooperation of a skilled bronchoscopist. A systematic plan of prolonged rest, combined with postural drainage, is the basic method of treatment. Into this plan the other methods may be introduced advantageously in properly selected cases. Bronchoscopy is of real value as an aid to drainage in certain cases. Artificial pneumothorax has a very limited field of usefulness. Approximately from 40 to 50 per cent of all cases will eventually need radical surgical treatment. Correct judgment of the indications for operation is the crucial element in successful treatment. In general, it is based on the avoidance of surgical intervention during the acute phases of the disease but without delaying too long and thus allowing the case to drift into the chronic stage.

Bacterial Vaccines in Asthma.—One hundred and forty-four cases of asthma have been treated by Brown with bacterial vaccines in accordance with a method described, and of these cases 51 per cent were completely relieved of asthma, 39 per cent were improved in varying degrees, and 10 per cent were unimproved.

Blood Pressure Lowering Principle in Seed of Watermelon.—Barksdale is of the opinion that the active principle of the seed of *Cucurbita citrullus*, to which the name of cucurbocitrin has been given, is evidently a substance belonging to the glucoside-saponin group manifesting certain pharmacologic actions worthy of further study. When both the crude extract and the active principle of the seed were taken orally a number of times, the outstanding effect was a prompt lowering of blood pressure by capillary dilatation, which, in turn, diminishes the peripheral resistance, thereby relieving the laboring heart of a tremendous load. Necropsies on rabbits following lethal doses of the active principle showed congestion and hemorrhages of lungs, liver and kidneys, and marked dilatation of the blood vessels of the bladder wall, with a coincident enormous flow of mucus bathing the cystic mucosa, suggestive of selective action by the drug. With clinical trials in a limited number of cases of moderately increased blood pressure in man, Barksdale obtained a lowering in both systolic and diastolic pressures with a corresponding lowering in the pulse pressure in most of the cases studied. The pulse apparently becomes more stable, and the patients experienced greater comfort; some of them were able to tell when the pressure was rising after the drug had been denied for a few days. In four cases of acute cystitis, the clinical relief was very prompt. In all of the clinical trials, no ill effects were noticed, and for this reason, the drug cannot be considered toxic even in very large doses. It possesses a rather slow and prolonged action. The results in the presence of pronounced arteriosclerosis seem to be very slight. The usefulness of this drug is suggested in cardiorenal conditions, and, perhaps, the other forms, also to the probable specific relief of acute and chronic pathologic conditions of the urinary bladder.

Annals of Clinical Medicine, Baltimore

4: 449-523 (Dec.) 1925

*Essential Thrombocytopenia. W. F. Hamilton and T. R. Waugh, Montreal.—p. 449.
*Blood in Hypertension; Relationship Between Anemia and Renal Insufficiency. S. F. Adams and G. E. Brown, Rochester, Minn.—p. 463.
Factors Concerned in Production and Healing of Peptic Ulcer, Results of Treatment of 470 Patients by "Physiologic Rest" Regimen. F. Smithies, Chicago.—p. 468.
*Diverticula of Esophagus. C. H. Jewett and J. A. Lichty, Clifton Springs, N. Y.—p. 488.
Rational Use of Wassermann Reaction. S. R. Haythorn, Pittsburgh —p. 493.
Wassermann Reaction as Index of Therapeutic Efficiency of Antisyphilitic Drugs. D. L. Belding, Boston.—p. 501.

*Pentosuria; Five Cases in One Family. H. W. Jones and C. W. Nissler, Philadelphia.—p. 505.
Common Sense in Management of Impotence in Male. M. Huhner, New York.—p. 510.

Essential Thrombocytopenia.—The four cases reported by Hamilton and Waugh are said to emphasize one very important practical point, namely, the seriousness of the condition and the need for prompt splenectomy; perhaps not in all cases, because the thrombocytopenic state seems to be in a way a relative affair, but most certainly in cases in which spontaneous hemorrhage occurs. Under such conditions one never knows when bleeding may take place in the brain, and once a diagnosis of essential thrombocytopenia has been made, splenectomy should be performed without delay.

Hypertension; Relation Between Renal Insufficiency and Anemia.—In seventy-six cases of hypertension, the relationship between renal insufficiency and anemia was studied by Adams and Brown. This study seems to show that there is a close parallelism between erythrogenic and renal function in cases of hypertension, similar to that found in glomerulonephritis. In cases of hypertension with arteriosclerosis during periods of renal failure, the hemoglobin and erythrocytes were diminished. The recovery of the blood does not parallel the recovery of renal function. The presence of anemia in cases of primary hypertension and consequent arteriosclerosis, in the absence of complicating disease or gross loss of blood, is regarded as being good evidence of existing or preexisting renal insufficiency.

Diverticula of Esophagus.—In four of the six cases reported by Jewett and Lichty there was present an apparent oversupply of saliva and it is believed that this is of pathognomonic significance. The authors are of the opinion that advancing age may furnish a reasonable cause for most of the diverticula of the esophagus, except for those caused by a previous inflammatory condition in and about the esophagus. The explanation given is that the years and years of swallowing consequent to long life finally produce a separation of muscle bundles; then the mucous membrane, with the submucosa, protrudes through the chink, thus forming a diverticulum. The pouch is most likely to occur at the upper end of the esophagus because the direct pressure brought about by the act of swallowing seems greater in the intrapharyngeal region than elsewhere.

Familial Pentosuria.—Jones and Nissler report five cases occurring in one family, all of the essential type. The initial case was one of cyanide poisoning in which both glucose and pentose were found. The dextrosuria was complicating. The only symptoms that these patients presented were those of an unstable autonomic nervous system. Pentosuria does not become dextrosuria.

Archives of Internal Medicine, Chicago

37: 1-150 (Jan. 15) 1926

*Liver Injury in Thyrotoxicosis as Evidenced by Decreased Functional Efficiency. J. B. Youmans and L. M. Warfield, Ann Arbor, Mich.—p. 1.
*Hyperglycemia; II. Physical and Chemical Studies of Human Blood from Cases of Diabetes Mellitus. L. Foshay, Cleveland.—p. 18.
*Peculiar Forms of Infection Caused by Typhoid Bacillus. A. Landau and M. Fejgin, Warsaw, Poland.—p. 32.
*Effect of Heart Muscle Disease on Electrocardiogram. A. W. Master and H. E. B. Pardee, New York.—p. 42.
*Comparison of Acute Rheumatic and Subacute Bacterial Endocarditis. B. J. Clawson and E. T. Bell, Minneapolis.—p. 66.
*Water Metabolism. E. Andrews, Chicago.—p. 82.
*Glucose Utilization in Renal Glycosuria. J. E. Paullin, Atlanta, Ga.—p. 88.
*Physiology of Synovial Fluid. F. A. Cajori, G. Y. Crouter and R. Pemberton, Philadelphia.—p. 92.
*Blood Sugar Curves in Epidemic Encephalitis. J. Kasanin and G. P. Grabfield, Boston.—p. 102.
*Intestinal Chemistry. III. Salivary Digestion in Human Stomach and Intestines. O. Bergeim, Chicago.—p. 110.
*Parallelism in Treatment of Tuberculosis and Cardiac Disease. H. J. Howk, Mount McGregor, N. Y.—p. 118.
*Vital Capacities of One Thousand Surgical Patients. H. J. Moersch, Rochester, Minn.—p. 128.
*Refractometric and Viscosimetric Indexes of Cerebrospinal Fluid. A. Levinson and A. M. Serby, Chicago.—p. 144.

Liver Injury in Thyrotoxicosis.—Tests of liver function have been made by Youmans and Warfield in forty-four patients with thyrotoxicosis. In twenty-eight of the patients tests of the glucose tolerance also were made. Twenty-two, or 50 per cent, of the patients in this series showed an impairment of liver function according to the tests of liver function used. Twenty-one of the twenty-seven cases satisfactorily tested showed a decreased glucose tolerance. No relation was found to exist between the functional efficiency of the liver as tested and the glucose tolerance, basal metabolic rate or other features of the disease, except loss of weight. The impairment of liver function in thyrotoxicosis seems to be associated to some degree with loss of weight.

Blood Alkalinity in Diabetes Mellitus.—Foshay found that in young, untreated diabetic patients there is evidence of some diminution of the blood alkalinity at all times. This rapidly disappears under insulin treatment. In untreated, arteriosclerotic diabetic patients there is no evidence of diminished blood alkalinity unless the patient is nearly in coma. In a case of extreme exsiccation from water deprivation cited, the blood picture was similar to that which occurs in acute diabetic coma. The chief differences are the greater retention of inorganic salts and a lesser glycemia.

Focal Typhoid Infections.—Five cases of typhoid infection in various localizations entirely devoid of the clinical picture of typhus abdominalis, and probably without its characteristic anatomic changes, are reported by Landau and Fejgin. In one case, in the absence of all clinical symptoms of typhoid, there was only the multilocular and characteristic localization of the infection which attacked at the same time the liver, the respiratory tract (broncholitis sinistra inferior) and the kidney. The second case was an infection produced by the Eberth bacillus under the form of an acute hemorrhagic inflammation of the large bowel, and an inflammation of the kidney pelvis, all without any clinical symptoms of typhoid. In the three remaining cases the typhoid infection took the form of an acute illness of the liver and bile ducts, with jaundice, leukocytosis and neutrophilia, although in its further course were observed symptoms of typhoid—diarrhea, swelling of the spleen, etc. On postmortem examination in one of these cases, none of the characteristic changes of typhoid fever were seen, especially no affections of the mucous membrane of the intestine. The authors warn against assuming that the existence of typhoid bacteremia and a positive Widal reaction in high dilution, 1:400, 1:800, along with a high temperature is always an absolute proof of typhoid.

Effect of Heart Muscle Disease on Electrocardiogram.—The outstanding feature of the study reported on by Master and Pardee seems to be the variability of the electrocardiographic abnormality when extensive chronic lesions of the ventricular muscle are present. There was apparently no specific relation between the type of electrocardiographic abnormality and the pathologic process found in the heart.

Acute Rheumatic and Subacute Bacterial Endocarditis.—Eighty cases of subacute bacterial endocarditis that came to necropsy are compared by Clawson and Bell with thirty-five cases of rheumatic endocarditis, eighteen of which came to necropsy. The remaining seventeen are typical cases of rheumatic endocarditis clinically, and *Streptococcus viridans* was isolated from all of them. The authors assert that experimental endocarditis and myocarditis similar to human rheumatic lesions can be produced in rabbits by injecting streptococci. The streptococci, generally the viridans strains, seem to be responsible for both rheumatic and subacute bacterial endocarditis.

Water Metabolism.—Andrews is of the opinion that certain hitherto inexplicable clinical phenomena may be explained on the basis that the water reserve is an active factor in water absorption and excretion.

Glucose Utilization in Renal Glycosuria.—The results of the administration of glucose on the respiratory quotient, total metabolism, blood sugar and glucose excretion in four cases of renal glycosuria are given by Paullin. Apparently, patients with renal glycosuria metabolize and store carbohydrate in the same way as normal persons. So far as the evidence points, they do not develop diabetes mellitus.

Physiology of Synovial Fluid.—The concentration of certain of the chemical constituents of nonpurulent synovial fluid

from arthritic patients with joint effusion has been determined by Cajorie et al. Changes in the composition of the blood have been induced experimentally by glucose feeding, administration of sodium bicarbonate and exposure to external heat. The effect of such blood changes on the composition of synovial fluid has been observed. The concentration of the diffusible constituents of synovial fluid uninfluenced by experimental feeding closely approaches that of blood plasma. It has been found that, following glucose ingestion, the sugar concentration of synovial fluid promptly rises to a level as high as, or higher than, that in venous blood. It is concluded from such experiments that diffusible substances pass easily from the blood to the synovial fluid and that the gastrointestinal tract must be regarded as being in surprisingly close communion with the joint fluids. The possibility of detriment from this source is pointed out. The adequacy of the synovial fluid for the nutrition of cartilage from the standpoint of carbohydrate and energy yielding content is clearly indicated. Experiments involving changes in the acid base equilibrium of the blood have not shown corresponding changes in the synovial fluid.

Blood Sugar Curves in Epidemic Encephalitis.—The blood sugar curves performed by Kasanin and Grabfield in seventeen cases diagnosed epidemic encephalitis or its sequelae deviated from the best established norm with such frequency that it may be concluded that there is a fundamental disturbance of the sugar metabolism in this disease. The derangement of the sugar metabolism persists in patients suffering from mental sequelae of this disease.

Salivary Digestion.—Studies of salivary digestion in the stomachs of normal men reported on by Bergeim showed on the average 76 per cent of the starch of mashed potatoes and 59 per cent of the starch of bread to be converted into maltose, an additional percentage being changed to dextrins. This considerable degree of starch conversion was generally brought about within from fifteen to thirty minutes after the meal was finished, active amylase disappearing and free hydrochloric acid appearing simultaneously. To function in the intestine, saliva must escape the action of acid gastric juice.

Treating Cardiac Patients in Tuberculosis Sanatorium.—Howk details the results obtained in the treatment of 440 cardiac patients in a tuberculosis sanatorium. The general plan of treatment provides for complete bed rest of every admitted patient until the essential examinations have been made, the period of rest depending on the condition of the vascular system and the patient's response to treatment. In the sanatorium, the period of bed rest has averaged forty-five days. The patient's physical resources are tested gradually to determine the limits within which he can exercise without danger. This period of graduated exercise is continued persistently until it is demonstrated either that the vascular system has not enough resources to enable the patient to resume work, or until he can take up an occupation.

Vital Capacity of Surgical Patients.—Determinations of the vital capacity of the lungs are not regarded by Moersch as a diagnostic measure in itself, but rather as an aid to diagnosis, just as the use of the thermometer and sphygmomanometer are aids.

Refractometric and Viscosimetric Indexes of Cerebrospinal Fluid.—Sixty-six specimens of cerebrospinal fluid obtained by Levinson and Serby from nonmeningitic and nonsyphilitic patients gave a refractometric reading of from 1.33472 to 1.33545, with an average of 1.33508. There were two exceptions to this rule, namely, one case of hydrocephalus and one case of compression myelitis, both of which gave an unusually high reading. In fluid from active and inactive syphilis, the refractometric reading varied between 1.33513 and 1.33557, with an average of 1.33525. Seven cases of tuberculous meningitis gave refractometric readings varying between 1.33475 and 1.33616, with an average of 1.33530. In fifteen fluids from three cases of meningococcus meningitis, the readings varied between 1.33487 and 1.33644 with an average reading of 1.33544. Eleven fluids from seven cases of other forms of purulent meningitis varied between 1.33497 and 1.33924, with an average reading of 1.33618. The viscosity in sixty-two out of sixty-six fluids from nonmeningitic cases ranged between 1.04 and 1.09, with an average reading of 1.05. The viscosity in seven fluids from cases of tuberculous meningitis varied between 1.05 and 1.18, with an average reading of 1.09. The viscosity in fifteen fluids of meningococcus meningitis varied between 1.07 and 1.14, with an average of 1.11. The viscosity in fluids from other forms of suppurative meningitis also averaged 1.11.

Archives of Otolaryngology, Chicago

3: 99-204 (Feb.) 1926

Blastomycosis of Larynx; Case. C. Jackson, Philadelphia.—p. 99.
Auditory Acuity Tests. Comparison of Two Types of Audiometers. C. C. Bunch, Iowa City.—p. 108.
Touch as Substitute for Hearing in Interpretation and Control of Speech. R. H. Gault, Washington, D. C.—p. 121.
Quantitative Tests on Bone and Air Acuity in Paracusis Willisi. A. G. Pohlman, St. Louis and F. W. Kranz, Geneva, Ill.—p. 136.
Alternating Weber Test: New Method of Determining Weber Lateralization in Doubtful Cases. D. Macfarlan, Philadelphia.—p. 144.
Two Cases of Primary Mastoiditis. J. I. Kemler, Baltimore.—p. 149.
Meningococcic Mastoiditis. O. J. Dixon, Kansas City, Mo.—p. 151.
Nasal Ganglion; Vertigo, Paragensia and Glossodynia. S. L. Ruskin, New York.—p. 153.

Boston Medical and Surgical Journal

194: 233-280 (Feb. 11) 1926

*Tragedies of Tooth Extraction. G. Blumer, New Haven, Conn.—p. 233.
Relation of Surgical Posture to Post-Tonsillectomy Pulmonary Abscess. W. R. O'Reilly, Boston.—p. 237.
Conservation of Life and Health by Means of Periodical Health Examinations. F. H. McCrudden, Boston.—p. 240.
*Malaria in New England. M. J. Quinn, South Manchester, Mass.—p. 244.
Treatment of Surgical Complications of Diabetes Mellitus. R. C. Cochrane, Boston.—p. 247.

Tragedies of Tooth Extraction.—Blumer cites five cases of infection which followed the extraction or treatment of infected teeth. The different types of fatal lesion which may result from tooth infection are grouped as follows: (1) Direct extension of the local inflammatory process with spreading inflammation, which may even invade the mediastinum, and death from toxemia; (2) metastasis to neighboring tissues, such as occurs in cases of meningitis or thrombosis of the cerebral sinuses following tooth extraction; (3) general septicemia or septicopyemia, which may terminate in (*a*) acute septicemia with or without endocarditis; (*b*) chronic septicemia with degenerative processes in the internal organs, or (*c*) prolonged septicopyemia with the formation of abscesses.

Malaria in New England.—Quinn's investigation show that malaria, which has existed in New England since 1634, is still epidemic in southern New England.

194: 281-328 (Feb. 18) 1926

*Heliotherapy. J. B. Hawes, 2d, Boston.—p. 281.
Erythema Arthriticum Epidemicum. E. H. Place, Boston.—p. 285.
Some Errors in Surgical Diagnosis. I. J. Walker, Boston.—p. 287.
Devices Useful in School Clinics. C. M. Kelley, Boston.—p. 290.
*Easy Method of Estimating Amount of Jaundice by Means of Blood Serum. W. P. Murphy, Boston.—p. 297.

Heliotherapy.—Hawes describes his methods of using sunlight treatment among patients in their own homes scattered in New England. He shows how easily this can be done, providing certain dangers are guarded against. Sunlight treatment is indicated in practically all cases of nonpulmonary, or so-called surgical, tuberculosis. It is not indicated in febrile cases of pulmonary disease or when there is other evidence that the condition is active. Actual sunlight is better than artificial sunlight. If the latter is used by means of a lamp it should be as an adjunct to exposure to actual sunlight. Hawes stresses the fact that heliotherapy should not be regarded as the only means of treatment nor as the most important means of treatment, but as an adjunct to rest, fresh air, proper nourishment and general hygiene. Signs and symptoms of too much sunlight, whether artificial or real, are the same as a tuberculin reaction, probably from the same cause. They are increased temperature and pulse, general malaise, headache, debility, with sometimes renewed

activity in the tuberculous focus. Sunlight treatment, whenever possible, should be done under the supervision of the physician in pulmonary cases. This is absolutely essential. Sunlight treatment, in some form or another, can be carried on in the patient's home and does not necessarily require sanatorium or hospital equipment. Sunlight treatment should be carried on methodically and if possible according to a definite schedule.

Icterus Index Test in Anemias.—Murphy regards the icterus index test as a reliable aid in differentiating between primary and secondary types of anemia. Slight and transient jaundice, such as may follow an acute gallstone colic, may be demonstrated in most instances. The course of a jaundiced case may be followed more accurately than is possible by means of simple observation. It may be possible to prevent serious liver upsets in patients under treatment with arsphenamine, if treatment be discontinued following rise in the icterus index.

Indiana State Medical Association Journal, Ft. Wayne

19: 51-92 (Feb.) 1926

Factors in Management of Peritonitis. W. W. Babcock, Philadelphia. —p. 51.
Appendicitis. A. C. McDonald, Warsaw.—p. 58.
Iodine in Treatment of Exophthalmic Goiter. A. S. Giordano, South Bend.—p. 63.
Drugs in Treatment of Heart Disease. G. S. Bond, Indianapolis.—p. 65.
Transverse Presentation. H. D. Fair, Muncie.—p. 69.

Johns Hopkins Hospital Bulletin, Baltimore

38: 1-82 (Jan.) 1926

Advances in Knowledge of Ductless Glands. J. J. Abel, Baltimore.—p. 1.
Protective Substance in Antipneumococcus Serum. L. D. Felton, Boston. —p. 33.
Studies on Supravitally Stained Living and Dead Leukocytes and Epithelial Cells in Vagina of Rat. Their Relation to Ovulation Cycle. A. F. Guttmacher, Rochester, N. Y.—p. 61.
*Certain Hitherto Undescribed Antirachitic Substances. A. de Bosanyi, Boston.—p. 72.

New Antirachitic Substances.—De Bosanyi found that healing of experimental rickets may be induced by certain hitherto unrecognized antirachitic substances. These are: a histon—the globin of hemoglobin; a diamino-acid—cystine; an aromatic compound—epinephrine, and an alkaloid, pilocarpine.

Journal of Industrial Hygiene, Baltimore

8: 51-88 (Feb.) 1926

*Potential Public Health Hazards from Use of Ethyl Gasoline. F. B. Flinn, New York.—p. 51.
*Four Cases of Poisoning by Mononitrochlorobenzene, One by Acetanilide. A. Renshaw and G. B. Ashcroft, Manchester, England.—p. 67.
*Prophylaxis in Industrial Lead Poisoning. D. McKail, Glasgow, Scotland.—p. 74.
Organization and Operation of Health Department of Tennessee Coal, Iron and Railroad Company. L. Noland, Fairfield, Ala.—p. 78.

Is Ethyl Gasoline Poisonous?—Experiments done by Flinn indicate apparently that animals exposed to skin application of ethyl gasoline will store lead; also that the rate of excretion does not equal the rate of absorption. It was noticed at various times that if for any reason the animal which may appear sick was not exposed for several days, it will show a marked improvement. Evidently its condition before the rest was due to lead exposure. This may account for the fact that so far no cases of lead poisoning have been found at filling stations or in garages. The time between the man's exposures may be long enough to permit him to remain in apparent good health though he may be storing lead. It may take years before he stores enough or before a sufficient change takes place in his metabolism to cause the symptoms commonly attributed to lead poisoning. The fact to bear in mind is that there is no doubt that a storage of lead takes place under exposure, and that lead stored in the body constitutes a potential lead poisoning.

Nitrobenzenes Are Poisonous.—Observations of cases has led Renshaw and Ashcroft to the conclusion that mononitrochlorobenzene is a poison affecting chiefly the blood, as is also the case with other nitrobenzene compounds. Its effect is cumulative, and when a sufficient quantity has been absorbed, toxic effects may occur which are hastened in some cases by a meal or by alcoholic drinks. Toxic effects may be delayed owing to the gradual action on the hemoglobin of the blood. Thus all these patients collapsed some hours after leaving work. The cyanosis and collapse appeared to progress to a maximum, after which gradual recovery, extending over some weeks, occurred. The dyspnea on exertion seemed to develop in each case a day or two later and to correspond with the period of the lowest red cell count; as the patient's dyspnea and cyanosis disappeared, the blood picture approximated more and more to the normal. In this type of poisoning there is an initial collapse, a typical color, and a delayed anemia with a high color index. There is no jaundice, and no nucleated red cells were seen in any film. Some red cell distortion and a few small forms are the only changes noted. The white cells are not affected.

Prophylaxis in Industrial Lead Poisoning.—To obviate the possibility of lead absorption in lead workers McKail proposes that the mouth, teeth and gums be washed well with a solution containing soluble sulphates, such as magnesium and sodium, and sulphuric acid, the acid being added to activate the solution, and that some of the solution be swallowed. Thus, such soluble lead as may have been swallowed in the saliva and pharyngeal secretions, and even postnasal excretions, will be precipitated in the stomach. It is recommended that the solution should be used at all cessations from work, which would be two or three times a day.

Kansas Medical Society Journal, Topeka

26: 37-70 (Feb.) 1926

Fractures. A. R. Hatcher, Wellington.—p. 35.
Diverticulitis of Colon. W. M. Mills, Topeka.—p. 39.
Relation of Dental Infection to Systemic Disease. R. L. Haden, Kansas City, Mo.—p. 41.
Blastomycosis; Four Cases. S. T. Millard and W. B. Goddard, Topeka. —p. 47.
Focal Infection. O. E. Stevenson, Oswego.—p. 51.

Medical Journal and Record, New York

123: 141-212 (Feb. 3) 1926

Case Against Indiscriminate Surgery for Peptic Ulcer. W. A. Bastedo, New York.—p. 141.
Habitual or Recurrent Dislocation of Shoulder. T. T. Thomas, Philadelphia.—p. 145.
Otitis Media Purulenta Acuta. L. S. Smith, Brooklyn.—p. 148.
Anaphylaxis. S. Pern, Melbourne, Australia.—p. 150.
Phantasy Method of Analyzing Narcisistic Neuroses. L. P. Clark, New York.—p. 154.
Diverticulosis. C. J. Drueck, Chicago.—p. 158.
Acute Myeloid Leukemia. M. Gordon, Brooklyn.—p. 163.
New Instrument for Use of Heliotherapy. J. W. Kime, Fort Dodge, Iowa.—p. 164.
Treatment of Laryngeal Tuberculosis with Goerz, Wessely Lamp. J. W. Miller, New York.—p. 166.
Affections of Respiratory System in Relation to Joint Tuberculosis. H. Keller, New York.—p. 169.
Acute Disseminated Bronchopneumonia Simulating Acute Miliary Tuberculosis. J. Blechschmidt, H. Perlman and L. S. Cohen, Philadelphia. —p. 174.
Tracheobronchoesophagoscopy. W. B. White, Stamford, Conn.—p. 178.
Bronchoscopic Treatment of Bronchial Asthma and Chronic Bronchitis. J. P. De River, San Francisco, Calif.—p. 180.
Three Cases of Abscess of Larynx. J. C. Seal, New York.—p. 182.
Etiology of Common Cold. A. Brashear Jackson, Washington, D. C. —p. 183.
Kenelm Digby; Amateur Physician. L. J. Bragman, Syracuse, N. Y. —p. 185.

New Orleans Medical and Surgical Journal

78: 483-556 (Feb.) 1926

Cardiospasm. P. P. Vinson, Rochester, Minn.—p. 483.
Focal Infection. S. E. Eason, New Albany, Miss.—p. 490.
*Prostatitis: Rôle in Focal Infection. H. W. E. Walther, New Orleans. —p. 493.
Focal Infection in Dental Tissues. J. N. C. Moffat, Clarksdale, Miss. —p. 497.
Roentgen-Ray Diagnosis of Colonic Lesions. C. P. Rutledge, Shreveport, La.—p. 502.
Some Difficulties in Diagnosis of Early Pregnancy from Surgeon's Viewpoint. J. A. Crisler, Memphis, Tenn.—p. 507.
*Treatment of Raynaud's Disease by Negative Pressure. R. S. Crichlow, New Orleans.—p. 511.
Relation of Medical Examiners to Life Insurance Companies. J. O. Segura, Jackson, Miss.—p. 515.
*Status of Mercurochrome as Intravenous Medication. M. S. Stringer, Jackson, La.—p. 519.

Clinical Manifestation of Biliary Toxemia. A. L. Levin, New Orleans. —p. 521.
Quinine as Preventive of Malaria. M. A. Barber, Greenwood, Miss. —p. 530.
Program for Part-Time County Officer. W. H. Frizell, Brookhaven, Miss.—p. 535.

Rôle of Prostate in Focal Infections.—In Walther's opinion the prostate and seminal vesicles play an important rôle in considering focal infections in the male and merit more serious consideration at the hands of the profession than has been accorded them so far.

Negative Pressure in Treatment of Raynaud's Disease.—Crichlow reports good results from the use of negative pressure in the treatment of a case of Raynaud's disease involving the feet. The amount of air exhausted depends to a large extent on the patient's ability to stand pain. After keeping the air exhausted from one to two minutes, it is necessary to release the tube and let the air come back into the jar; then, renewing the process of exhausting the air from the jar and letting it back for an interval of from fifteen to twenty minutes, depending on the ability of the patient to stand the same. This was repeated twice daily for the first week, then once daily for the next two weeks, then twice a week for the next month, and later once every ten days, keeping this up for at least a year. The results were most gratifying. The condition is entirely under control.

Use of Mercurochrome in Septicemia.—Stringer concludes that mercurochrome-220, used intravenously, is not a panacea in septicemia. Its action is most likely that of an agent to produce a systemic reaction, emphasizing the natural defenses of the body. Though its use is not without danger, its low toxicity recommends its use in extreme cases, and affords a not wholly explained chance of benefit in those cases with a certain margin of "fight" still present.

New York State Journal of Medicine, New York

26: 85-126 (Feb. 1) 1926

Prostatic Obstructions in Patients Over 50. D. M. Davis, Rochester. —p. 85.
*Effect of Producing Aseptic Meningitis on Dementia Praecox. E. S. Barr and R. G. Barry, Philadelphia.—p. 89.
Chronic Intestinal Infections. Nonulcerative Types. G. R. Satterlee, New York.—p. 92.
Radium. G. A. Robinson, New York.—p. 96.
Herald of Men of Death: Influenza. T. F. Reilly, New York.—p. 99.
Management of Syphilis Complicating Pregnancy. A. C. Beck, Brooklyn. —p. 102.
Diabetes Mellitus; Results of Insulin Treatment. G. M. Parkhurst, Bath. —p. 104.

Aseptic Meningitis and Dementia Praecox.—Barr and Barry aver that the introduction of sterile inactivated, normal horse serum, by a series of treatments, into the spinal canal of cases of dementia praecox produces (*a*) a marked physical reaction with high temperature; (*b*) an aseptic meningitis; (*c*) mental improvement of varying degree in a large percentage of cases. Younger patients are more responsive and their improvement is more lasting. Certain patients are unsuited: those over 45; those having tuberculosis; those having other systemic diseases, as arteriosclerosis, cardiorenal disease, general adenopathy, persistent thymus, etc. The authors are of the opinion that the reactions observed and mental improvement noted are most probably not due to any specific virtue belonging to horse serum, but so far they have found no other agent or method of treatment which yields the same result.

Ohio State Medical Journal, Columbus

22: 117-184 (Feb.) 1926

Physiology of Blood Clotting; Theories of Thrombosis; Determination of Clotting Time. T. L. Ramsey, Toledo.—p. 117.
Appendicitis Complicating Pregnancy. W. D. Fullerton, Cleveland.—p. 124.
Treatment of Corneal Ulcers with Electro-Thermophore. F. D. Phinney, Cincinnati.—p. 127.
Pre-School Age. F. R. Dew, Barnesville.—p. 130.
Parkinson's Syndrome Following Epidemic Encephalitis. W. H. Pritchard, Columbus.—p. 131.
Diagnosis and Treatment of Tuberculous Peritonitis. H. A. McKnight, Springfield.—p. 135.
Perforated Gastric and Duodenal Ulcers. L. V. Zartman, Columbus. —p. 120.

Physical Therapeutics, Baltimore

44: 1-66 (Jan.) 1926

Use of Roentgen Ray and Desiccation in Treatment of Infected Tonsils. W. D. McFee, Haverhill, Mass.—p. 1.
Thermotherapy in Eye, Ear, Nose and Throat. T. S. Blakesley, Kansas City, Mo.—p. 6.
Treatment of Gonococcal Infection by Diathermy. E. P. Cumberpatch, London.—p. 19.
Salt Glow, Massage and Spray. V. C. Kinney, Wellsville, N. Y.—p. 33.
Wet Pack. C. Pope, Louisville, Ky.—p. 37.

Rhode Island Medical Journal, Providence

9: 17-32 (Feb.) 1926

Ideals and Ethics. A. H. Miller, Providence.—p. 17.
Treatment of Auricular Fibrillation. S. A. Levine, Boston.—p. 19.

Surgery, Gynecology and Obstetrics, Chicago

42: 161-172 (Feb.) 1926

*Treatment Following Operations for Ulcer of Duodenum and Stomach. G. B. Eusterman, Rochester, Minn.—p. 161.
*Fundamental Principles in Surgery of Stomach and Duodenum. D. C. Balfour, Rochester, Minn.—p. 167.
*Hyperthyroidism in Children. R. S. Dinsmore, Cleveland.—p. 172.
Care of Handicapped Goiter Patient. R. S. Dinsmore, Cleveland.—p. 177.
*Rehabilitation of Cardiovascular Patient. F. H. Lahey and B. E. Hamilton, Boston.—p. 179.
*Preparation of Patients for Prostatectomy. H. C. Bumpus, Jr., Rochester, Minn.—p. 182.
*Treatment of Surgical Patient Handicapped by Urinary Obstruction. B. C. Hunt, Rochester, Minn.—p. 187.
Physiologic Principles in Treatment of Benign Hypertrophy of Prostate. W. Walters, Rochester, Minn.—p. 191.
Use of Insulin in Surgery and Obstetrics. F. N. G. Starr and G. A. Fletcher, Toronto, Can.—p. 194.
Prevention of Disease. W. A. Lane, London.—p. 196.
Experimental Hydronephrosis; Arterial Changes in Progressive Hydronephrosis of Rabbits with Complete Ureteral Obstruction. F. Hinman, San Francisco, and D. M. Morison, Edinburgh, Scotland.—p. 209.
Use of Diathermy and Quartz Lamp for Conserving Temperature of Viscera and Promoting Welfare of Patient Before and After Abdominal Operations. G. W. Crile, Cleveland.—p. 218.
*Muscle and Fascia Suture with Relation to Hernia Repair. A. R. Koontz, Baltimore.—p. 222.
*Necrosis of Corpus Luteum of Pregnancy. D. Brannan and M. Cohen, Pittsburgh.—p. 228.
*Corpus Luteum as Source of Follicular Hormone. C. G. Johnston and V. L. Gould, St. Louis.—p. 236.
Retroposition of Uterus. Analysis of 1,000 Cases. J. F. McGrath, New York.—p. 241.
*Comparative Study of Radiation and Surgical Treatment for Fibromyoma of Uterus. F. A. Ford, Rochester, Minn.—p. 245.
*Blood Calcium in Eclampsia. S. M. Feinberg and A. F. Lash, Chicago. —p. 255.
*Cysts of Semilunar Cartilages. N. Allison, Boston, and D. S. O'Connor, Waterbury, Conn.—p. 259.
Analysis of 1,527 Fractures. E. D. Newell, E. R. Campbell and J. M. Frere, Chattanooga, Tenn.—p. 263.
*Operation for "Dangle Foot." R. Morison and W. Mackenzie, Newcastle-on Tyne, Eng.—p. 270.
*Correction of Deformity in Bony Ankylosis of Hip Joint. L. C. Abbott and F. A. Jostes, St. Louis.—p. 274.
*Traction on Sternum in Treatment of Multiple Fractured Ribs. T. B. Jones, Rochester, N. Y., and E. P. Richardson, Boston.—p. 283.
Observerscope for Proctoscopy. L. A. Buie, Rochester, Minn.—p. 285.

Cooperation Reduces Surgical Morbidity.—The cooperation of internist and surgeon in the preoperative preparation of patients has strikingly reduced the surgical mortality in various types of diseases. In Eusterman's opinion a similar pooling of therapeutic resources after operation should reduce surgical morbidity to a minimum. The patient who has been well chosen and skilfully operated on invariably does well without any exact postoperative regimen. The use of proper diet, alkalis, frequent findings, and so forth, immediately after operation, for about six weeks at least, and for a longer period in certain types of cases, rests on sound experimental and clinical ground. The better end results in the medical or surgical treatment of peptic ulcer in women than in men are largely due to their superior personal and eating habits and better cooperation in general. The habitual or excessive use of tobacco is harmful to the patient with peptic ulcer.

Surgery of Stomach and Duodenum.—As the result of more intensive study and preoperative preparation of these patients Balfour says there were only four operative deaths among 400 cases: one from bronchopneumonia ten days after a difficult partial gastrectomy for advanced carcinoma involving the pancreas, the resection having been ill advisedly under-

taken as a palliative measure to relieve obstruction; one from acute pancreatitis following partial gastrectomy for multiple gastrojejunal ulcers associated with subacute pancreatitis; one from the extension of a retroperitoneal infection into the general peritoneal cavity ten days after excision of a large bleeding duodenal ulcer of the posterior wall and followed by gastro-enterostomy in a patient with marked secondary anemia; and one following jejunostomy for a large subacute perforating ulcer at the cardia in a patient whose condition was so bad that even this operation was questionably advisable.

Hyperthyroidism in Children.—Dinsmore feels that hyperthyroidism in children is more common than has been supposed. The etiology is unknown. A small percentage of cases follow acute infections, but ordinarily there is no tangible factor to which the disease can be attributed. The onset is abrupt and the clinical course rapid. Induced hyperthyroidism may follow the prophylactic use of iodine in a very small percentage of cases but this can usually be controlled by the discontinuance of the iodine. These children are extremely susceptible to all kinds of operative procedures and must be handled with extreme care. In the presence of other foci of infection, the goiter should be removed first, the other foci of infection being removed after the patient has recovered from the thyroidectomy.

Rehabilitation of Cardiovascular Patient.—Lahey and Hamilton direct attention to the occasionally indicated method with which they have succeeded in rehabilitating patients with cardiovascular disease by indirect surgical measures. This consists in the removal of surgical burdens. The order of the greatest degree of accomplishment is removal of the toxic goiter, removal of large pelvic tumors, and removal of troublesome gallbladders. If there is cooperation between cardiologist, anesthetist and surgeon, not only will the mortality in this seemingly hopeless group be surprisingly low, but the degree of restored ability in many cardiovascular cases will be strikingly high.

Preparation for Prostatectomy.—To undertake cystostomy before the urea content of the blood is below 100 mg. for each hundred cubic centimeters, Bumpus says, is to diminish materially the possibility of the patient's recovery, as so reduced a renal function will frequently not bear the added load imposed by the prostatectomy.

Surgical Preparation in Cases of Urinary Obstruction.—The successful management of these cases, Hunt says, demands drainage of the bladder preliminary to prostatectomy for at least ten days, often for longer periods. This has been accomplished by permanent urethral catheter, followed by the one stage visualized suprapubic prostatectomy in 80 per cent of the cases. The adoption of this principle of management in all cases has resulted in the removal of the prostate gland in 204 cases at the Mayo Clinic with but three deaths, in 172 consecutive cases of which the one stage operation was employed with but one death.

Muscle and Fascia Suture in Herniotomy.—These experiments done by Koontz show that muscle unites with fascia by the union of the fascia with the fibrous components of the muscle, and that the strength of this union depends on intimacy of contact between the fascia and the muscle. It is necessary, therefore, that both muscle and fascia be stripped of areolar tissue before they are sutured together. Still better results are obtained if raw surface of muscle is sutured to fascia.

Necrosis of Corpus Luteum.—Two cases are cited by Brannan and Cohen. They are said to be the only cases on record. In the first case the subject was a primipara who presented the clinical features of pernicious vomiting in the third month of pregnancy. The illness was acute and progressive, terminating in death forty-four days after the onset. Aside from marked pulmonary edema, the postmortem examination, so far as the gross findings were concerned, revealed little of significance. Microscopically, the extensive coagulative necrosis of the corpus luteum constituted by far the most important lesion. In the second case, the clinical picture was also that of pernicious vomiting in early pregnancy. This patient was a multipara in the third month of gestation. The duration of the illness was less than a month. The presence of jaundice and the high nonprotein nitrogen of the blood were unusual features worthy of note. With the exception of edema of the lungs and adenomatous goiter, the necropsy findings were not remarkable. The important lesions microscopically were in the corpus luteum, in the liver and in the decidua. The massive necrosis of the corpus luteum was by far the most marked lesion found.

Corpus Luteum Hormone.—Johnston and Gould are inclined to believe that the corpus luteum does not secrete the hormone which produces hyperplasia of the uterus and vagina.

Treatment of Fibromyoma of Uterus.—Reviewing a large series of cases of fibromyoma of the uterus treated by operation and by radiotherapy Ford says a relatively high percentage of the latter group has been found to require further treatment, either repeated radiation (18 per cent) or operation (13.7 per cent) as compared with 4 per cent of the surgical group who received further treatment. It is true, however, that more recent cases, particularly after roentgen-ray treatment, are showing definitely better results through greater experience in the dosage required. A study of individual cases shows so many thoroughly satisfactory results with radiotherapy that the discrepancy in the total results, Ford says, must apparently be attributed to injudicious selection of cases, or to inadequate dosage. Great care must be exercised to rule out malignant disease at the time of radiation. Curettage should precede treatment in any case with suspicious symptoms.

Blood Calcium in Eclampsia.—A study made by Feinberg and Lash of the blood calcium level in eclamptics has shown that on theoretical grounds a decrease in the blood calcium may be expected in eclampsia, although there is no appreciable relation between the blood calcium and eclampsia.

Cysts of Semilunar Cartilage.—Allison and O'Connor report two cases of cyst of the external semilunar cartilage and one case of cyst of the internal semilunar cartilage. It is their belief that these cysts represent the end-result of a degenerative process caused by an interference with the blood supply of the cartilage in this region, the exciting cause of which is a nonlacerating injury. The cysts were located in the midportion of the semilunar cartilage on the external border. Spontaneous recovery is unknown and recurrences have taken place in those cases in which the entire cartilage was not removed.

Operation for "Dangle Foot."—Morison and Mackenzie fix the ankle by making osseous ligaments between the tibia and fibula above and the astragalus and os calcis below. Bone grafts are taken from the crest of the tibia. Details of procedure are given.

Molding Callus to Correct Hip Joint Deformity.—The method employed by Abbott and Jostes consists in a gradual molding of callus. A subtrochanteric osteotomy of the femur is done and the limb fixed in the position of deformity by applying a Thomas splint with traction. When callus has surrounded the bone ends, gradual correction of the deformity is obtained by changing the position of the limb. For example, in abduction deformity, the leg is gradually adducted until it becomes nearly parallel to its fellow. With each change in position a bending of the callus occurs. When the final position of correction is secured there is produced a definite angulation at the site of osteotomy. Correction of the deformity is obtained, therefore, by creating a malunited fracture of the femur but without any displacement of the fragments. The desired position for function is maintained until consolidation of the callus has taken place.

Traction on Sternum in Rib Fracture.—In the case reported by Jones and Richardson, under procaine anesthesia two incisions, about 1 cm. long, were made just lateral to and at right angles to the border of the sternum at the level of the third interspace, and were carried down until the edges of the sternum were exposed, great care being taken to avoid puncture of the pleura. An ordinary "bullet forceps," such as is used to grasp the cervix in gynecologic cases, was used to grasp the sternum, a hook being placed into the lateral aspect of the sternum on each side and the forceps then being locked. It was found that a moderate degree of

traction served to keep the sternum elevated during inspiration. The optimum degree was determined by hand and maintained by the usual method of weights and pulleys, attached to a rainbow frame.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

4: 449-554 (Dec.) 1925

Work of Sir Charles Bell in Relation to Modern Neurology. H. C. Thompson.—p. 31.
Morphology of Gasserian Ganglion. C. H. Frazier and E. Whitehead. —p. 458.
*Peculiar Reflex Phenomenon. P. M. van W. Palthe.—p. 476.
Mechanisms of Speech and Deglutition in Progressive Bulbar Palsy. M. Critchley and C. S. Kubik.—p. 492.
*Varicella Myelitis. K. H. Krabbe.—p. 535.

Trigeminal Reflex Phenomenon.—By means of a certain form of stimulation applied to a part of the skin and mucous membrane supplied by the second branch of the trigeminal nerve, a reflex can be elicited which consists in (*a*) arrest of breathing in any phase; (*b*) movement of the floor of the mouth and of the root of the tongue; (*c*) movement of the larynx, and (*d*) increase of pressure in the nasal cavities. This reflex resembles in many respects the swallowing reflex. Palthe says that biologically this reflex may be considered as a protection against the entrance of harmful substances into the larynx and pharynx. It acts also during unconsciousness. The unpleasantness which arises when a strong current of air strikes the face is explained by this phenomenon. This "reflex swallow" may have localizational value in distinguishing between disorders in the trigeminal sensibility of peripheral origin and those due to more centrally situated lesions, above the linking center of these cerebral nerves.

Chickenpox Myelitis.—Krabbe reports a case of myelitis caused by chickenpox and probably produced by the varicella virus itself. The favorable course of the disease agrees with the good prognosis of chickenpox.

British Journal of Surgery, Bristol

13: 405-600 (Jan.) 1926

XIX. Thomas's Hip Splint. D'Arcy Power.—p. 405.
*Traumatic Neuritis of Ulnar Nerve in Postcondylar Groove. H. Platt. —p. 409.
*Operative Repair of Cruciate Ligaments in Severe Trauma of Knee. A. H. Edwards.—p. 432.
Tuberculosis of Glands in Ileocecal Angle: Cause of Pain in Right Iliac Fossa.—p. 439.
Differential Diagnosis of Calcified Mesenteric Glands by Radiologic Examination. L. A. Rowden.—p. 451.
*Internal Urethrotomy; End Results. G. P. B. Huddy.—p. 458.
Applied Anatomy and Physiology of Thyroid Apparatus. G. S. Williamson.—p. 466.
Bone-Grafting of Mandible; Seven Cases. W. Billington and H. Round. —p. 497.
Complete Exposure of Radius. A. K. Henry.—p. 506.
*Desquamative and Dysgenetic Epithelial Hyperplasias in Breast. G. L. Cheatle.—p. 509.
Further Results of Nerve Anastomosis. C. Ballance, L. Colledge and L. Bailey.—p. 533.
Ileus Following Fractured Ribs. F. G. Ralphs.—p. 559.
Operation for Covering Guillotine Amputation Stump. W. B. Gabriel. —p. 562.
*Unusual Complication in Operating on Large Tumors of Neck. H. Hallilay.—p. 566.
Suppurating Thyroglossal Cyst. W. E. M. Wardill.—p. 567.
Mucous Cyst of Tongue; Case. E. I. Lloyd.—p. 568.
Cystic Pneumatosis of Small Intestine. S. H. Pugh.—p. 572.
Case of Imperforate Anus with Megalocolon and Terminal Peritonitis. R. W. Jones.—p. 575.
Pulsating Goiter Accompanied by Recurrent Dislocation of Eyeballs. H. Burrows.—p. 578.
Thyroid Gland Tissue in Dermoid Cyst of Ovary. E. H. Shaw.—p. 580.
Traumatic Rupture of Hepatic Duct. S. A. Wallace and A. Spiro.—p. 582.
Hernia Through Foramen of Winslow; Secondary Rupture Through Gastro-Hepatic Omentum. E. R. Carling and A. T. Smith.—p. 585.
Acute Ascending Parenchymatous Enteritis Causing Paralytic Ileus. Z. Cope.—p. 587.

Treatment of Traumatic Neuritis of Ulnar Nerve.—In Platt's opinion there is one simple and effective operation which is universally applicable in all cases of traumatic neuritis of the ulnar nerve in the postcondylar groove, viz., anterior displacement of the nerve trunk.

Repair of Cruciate Ligaments.—Edwards uses the tendons of the gracilis and semitendinosus muscles to make new cruciate ligaments. These tendons are passed through a drill hole in the internal femoral condyle and then through drill holes in the head of the tibia. The canals lead from the upper surface of the tibia forward and downward so that when the tendons are passed through them they are sutured on to either side of the tibial attachment of the patellar ligament.

Internal Urethrotomy.—Of 107 patients on whom this operation was performed two died. In the first of these, carcinoma of the bladder, vesical calculus, and purulent nephritis were associated with the urethral stricture. In the second case irregular pyrexia ensued, and one rigor followed the dilation. Death occurred on the twelfth day. At necropsy the bladder was found dilated, hypertrophied and inflamed: the kidneys were hydronephrotic and showed a condition of pyelonephritis. Huddy urges that the operation should be preceded by suprapubic drainage of the bladder if there is evidence of renal insufficiency or marked urinary infection. A periurethral abscess should first be drained, and internal urethrotomy performed when the infection has subsided. Urinary extravasation is best treated by free incision into the infected parts, combined with perineal drainage of the bladder, internal urethrotomy being performed at a subsequent operation. The dangers of hemorrhage have been exaggerated. The results are extremely satisfactory, and the operation should be carried out in any case in which dilation is difficult or unsatisfactory. An indwelling catheter has value, and should, unless any complication arises, remain in position four days. Postoperative dilation is essential.

Epithelial Hyperplasias in Breast.—There appears to Cheatle to be a definite sequence of events in epithelial changes in the breast that end in carcinoma. The different epithelial changes have a common site of origin, namely, the acini and terminal ducts. The chain of events may be interrupted at any point, due either to intrinsic biologic changes in the cells or to extrinsic factors such as variation in connection with the exciting cause. The interruption may result in the process remaining latent or in its subsequent degeneration and disappearance. The sequence of events begins as what Cheatle terms a desquamative epithelial hyperplasia, and passes on to an epithelial hyperplasia which is not desquamative and is termed dysgenetic epithelial hyperplasia. The events described as occurring in the breast are identical in time and sequence with those occurring in the skin of man and mice after the application of tar.

Tumor of Neck.—The remarkable feature of Hallilay's case was the way in which the growth had separated the constituents of the carotid sheath, the right vagus being stretched over the front of the tumor, while the right carotid and jugular were displaced to the left of the middle line.

British Medical Journal, London

1: 225-268 (Feb. 6) 1926

Twenty-Five Years' Progress in Abdominal Surgery. A. H. Burgess. —p. 225.
Hodgkin's Disease in Man and Animals. H. Rolleston.—p. 230.
*Infantile Paralysis in Australia and New Zealand. J. M. Gill.—p. 232.
*Action of Pituitary Extract Administered by Alimentary Canal. H. H. Knaus.—p. 234.
*Appendicostomy for Relief of Thirst and Inanition After Abdominal Operations. H. de Lisle Crawford.—p. 236.
Technic of Adenotonsillectomy. J. C. G. Macnab.—p. 236.
Inguinal Hernia Containing Rudimentary Horn of Bicornate Uterus. T. B. Mouat.—p. 237.
Vaginal Calculus. E. F. Murray.—p. 237.
Actinomycosis of Appendix. C. F. J. Baron.—p. 237.
*Surgery of Malignant Disease of Pharynx. W. Trotter.—p. 269.
Development of Vaginal Operations for Genital Prolapse. W. E. Fothergill.—p. 273.
*Operative Treatment of Hernia in Infants and Young Children. A. Fullerton.—p. 274.
Constipation in Infancy and Childhood. D. Paterson.—p. 277.
Historical Survey of Peroral Endoscopy. I. Moore.—p. 278.
*Etiology of Diverticula of Intestine. R. Davies-Colley.—p. 282.
Fish as Source of Certain Coccidia Recently Described as Intestinal Parasites of Man. J. G. Thompson and A. Robertson.—p. 282.

Relation of Obesity to Diabetes Mellitus, and So-Called Lipogenic Diabetes. F. P. Weber.—p. 284.
Hyperglycemia as Cause of Pruritus Vulvae. E. McPherson.—p. 284.
Congenital Hydronephrosis in Newly Born Infant. R. H. Hunter. —p. 284.
Pulmonary Embolism Following Operation for Cataract. T. H. Cresswell.—p. 284.

Infantile Paralysis in Australia and New Zealand.—Gill avers that there have been many epidemics of this disease in New Zealand and Australia. The first occurred in Sydney in 1903, during November and December, when about forty cases were treated at the Children's Hospital. From Sydney it spread during the course of the following year over the greater part of New South Wales and Queensland. From 1903 to 1909 there was an interval, but from 1909 to 1916 there were annual epidemics, always reaching their height in the second half of the summer and in the autumn. There was again an interval till 1921. There were mild epidemics in Sydney in 1921, 1923 and 1924, but none in 1925. In 1923 there were forty cases in the hospital. In 1924 there were forty-five cases in the hospital. The last two epidemics were very similar. They both reached their maximum later than usual. In 1923 most cases were admitted in May, a cool month; in 1924, in March. Both epidemics were mild, with a high recovery and a low mortality rate. A very extensive epidemic visited New Zealand, but not Australia, in 1925.

Action of Pituitary Extract Administered by Alimentary Canal.—Knaus states that when pituitary extract is administered at any part of the alimentary canal—mouth, stomach, small intestine, rectum—pressor action is never observed. When pituitary extract is introduced into the stomach or small intestine, it exerts no influence on uterine muscle. When the extract is administered by the mouth, after a latent period of about eight minutes, it exerts a marked action on the uterus, increasing both the tone and automatic movements. The oxytocic substance is therefore absorbed. The rectum absorbs the oxytocic substance also, although absorption is probably not so complete as with administration by mouth.

Appendicostomy for Relief of Thirst.—Crawford describes a method by which appendicostomy may be performed in a few seconds at the close of any ordinary abdominal operation by means of a stab incision. Before the patient leaves the table, 1 pint of saline and glucose solution is run in through a funnel, and this is repeated hour after hour as long as may be necessary. The chief points about this method are as follows: There is none of the intolerable thirst so common after severe abdominal operations. The pulse slows quickly, and the blood pressure rises. There is very little restlessness. The skin is moist; the mouth and tongue are clear and moist. The kidneys act well. Peristalsis is markedly stimulated. Incidentally, the appendix is eliminated; with regard to the frequent presence of chronic disease in the appendix this is important. The patient is fed without disturbance, whether awake or sleeping. There is no futile coaxing of the rectum to fulfil the functions of the colon, and the stomach is allowed to rest.

Surgery of Pharyngeal Cancer.—There is one method of general utility in the operative treatment of carcinoma of the laryngopharynx, says Trotter. This is the operation of lateral (transthyroid) pharyngotomy, which is the foundation on which all the different procedures, from the simplest to the most elaborate, must be built up. It is primarily a method of access, and depends on the anatomic fact that the laryngopharynx lies within the laryngeal skeleton. If the great cornu of the hyoid bone and the ala of the thyroid cartilage are removed, the wall of this part of the pharynx is disclosed unopened, and through it the situation and extent of a growth can be determined by palpation with some precision. It can now be decided if a radical procedure is possible, and what it should be.

Herniotomy in Infants.—Statistics given by Fullerton are said to prove that operations for hernia in infants and young children are as safely conducted in the outpatient department as in the wards; in fact, from the figures quoted, the balance, if anything, is slightly in favor of the outpatient department. Of 184 children operated on (209 operations), seventy-seven were less than 3 months old and forty-eight were between 3 and 12 months of age. The advantages gained by operating in the outpatient department are: (1) The child, if being nursed by its mother, does not suffer the inconvenience and risk of being weaned. (2) The range of usefulness of the hospital is enormously increased, the beds which would otherwise be occupied by cases of hernia being available for other patients.

Etiology of Intestinal Diverticula.—Three explanations of the occurrence of this condition are given by Davies-Colley: (1) The subperitoneal fat weakens the intestinal wall by inducing a simple atrophy of the muscle from pressure. (2) The fat invades and separates the muscle fibers and so produces weak spots. (3) The fat becomes infected, probably by the intestinal contents, and the muscle in contact with it is weakened by an inflammatory process. This last alternative is believed to be the true explanation of most of the diverticula occurring in the colon, though some in the colon and perhaps most of those in the small intestine, in which infection of the fat is less likely to happen, may be ascribed to one or other of the noninflammatory causes suggested.

Edinburgh Medical Journal

33: 49-96 (Feb.) 1926

*Scarlatinal Nephritis. A. Joe and A. B. Williamson.—p. 49.
*Renal Function in Scarlet Fever. G. H. Percival and C. P. Stewart. —p. 53.
*Morbid Anatomy and Histology of Pellagra. W. Susman.—p. 58.
*Use of Massive Doses of Digitalis. A. R. Gilchrist.—p. 65.

Scarlatinal Nephritis.—During the two year period 1921-1922, the percentage of deaths from scarlatinal nephritis in the Edinburgh City Hospital was 6.9; in the period 1923-1924 it was 12. The incidence of the complication also shows a definite increase. It was 1.4 in 1919 and 4.92 in 1924. Joe and Williamson studied nineteen cases. The complication appeared in all cases on the eighteenth day. The state of affairs as revealed by urine examination never stood in any relationship to the severity of the patient's condition. In one case a necropsy was permitted. It disclosed as the chief defect in the kidneys a definite acute degenerative change in the secreting tubules, not, as heretofore stated, in the glomerulus. Fatalities occurred in this series of cases when least expected.

Renal Function in Scarlet Fever.—Percival and Stewart are convinced that no warning of an impending nephritis can be obtained from examination of the blood urea content. They have found an early and a later rise in blood urea to occur. The fall is rapid in those cases which did not develop nephritis, and usually much slower in those which did. In four cases out of six, clinical signs of nephritis—diminished output of urine, albuminuria, hematuria, casts and slight edema, appeared while the blood urea was still low, though in every case there was a subsequent rapid rise.

Morbid Anatomy of Pellagra.—The morbid anatomy and histology of a case of pronounced pellagra was thoroughly examined by Susman. The oldest lesion was in the thyroid, and proliferation of the vesicular epithelium, increased vascularity and intracellular granularity and a marked fibrosis indicate a disease of the thyroid. Metabolic disturbances which followed, and the damage incurred by the causal agent are responsible for the liver damage and consequent fibrosis. This is a slow process. The toxic material is excreted by the kidney tubules, and there causes a peritubular degeneration, and later, fibrosis. The lesions in the other organs are secondary to this, the main process.

Use of Massive Doses of Digitalis.—Gilchrist had employed Eggleston's method of rapid digitalization on over fifty occasions in cases of auricular fibrillation. As a general rule, slowing of ventricular rate occurred within six hours, and maximum effects were reached in from fifteen to twenty-four hours, and often persisted for several days. In cases of fibrillation secondary to rheumatic infection, with the patient acutely ill, with a marked venous congestion and high ventricular rates, the results were often dramatic. In cases of fibrillation secondary to chronic myocardial degeneration and accompanied by advanced arteriosclerotic and renal changes, the method is not always of such value as in the former group, but may be used if the symptoms demand it. In urgent

cases the method is less dangerous than the intravenous administration of strophanthin. The response to massive doses is of some value in forming a prognosis. From the practitioner's point of view, Gilchrist says Fraser's method or Pardee's may be employed. It is easy to calculate the dose on the basis of 15 minims of the tincture for each 14 pounds of body weight, and give 20 minims six hourly thereafter until maximum therapeutic effects are obtained. Toxic effects are rare and can be largely avoided by keeping the patient under fairly frequent observation.

Japan Medical World, Tokyo

6: 1-16 (Jan. 15) 1926

Biochemical Racial-Index of Japanese in Hokuriku District. T. Furuhata and T. Kishi.—p. 1.
Auto and Iso-Hemoagglutinations in Rabbits. M. Matsuda.—p. 4.
Beriberi in Japan. R. Takano.—p. 8.

Journal of Tropical Medicine and Hygiene, London

29: 17-37 (Jan. 15) 1926

Virus Diseases of Bacteria, Plants and Vertebrates. H. P. Bayon.—p. 17.

Lancet, London

1: 269-322 (Feb. 6) 1926

*Clinical Aspects of Simple Goiter. J. Berry.—p. 269.
*Fat Soluble Vitamins. J. C. Drummond.—p. 272.
*Tubercle Bacilli in Feces. K. A. H. Sykes.—p. 273.
Treatment of Recent "Pott's Fracture." C. M. Greenslade.—p. 276.
Case of Hernia of Stomach and Transverse Colon. E. C. Bridges and J. Fawcett.—p. 278.
New Method of Physical Examination (Ectoscopy). E. Weisz.—p. 280.
Medicinal Induction of Labor. K. V. Bailey.—p. 283.
Case of Coronary Embolism. C. H. Miller.—p. 284.
Case of Pneumococcal Peritonitis. P. O. Ellison, H. L. Tidy and L. G. Williams.—p. 284.
Hyperesthesia in Disease of Gallbladder. Z. Cope.—p. 285.

Simple Endemic Goiter.—Simple endemic goiter, in Berry's opinion, is not hypertrophy, but is essentially a degeneration of the thyroid gland. The gland is not overactive, but underactive. Whatever may be the connection between iodine and the thyroid gland, there is no reason for believing that a lack of iodine has anything to do with the causation of endemic goiter, as found in the human subject. It is quite certain that, at least in the vast majority of cases, the disease is produced through the agency of drinking water. There is much evidence that practically all waters which produce goiter contain frequently, although not necessarily at all times and seasons, mineral matter in suspension, usually in an extremely fine state of subdivision. There is also a good deal of evidence that this mineral matter is generally of a calcareous nature. Organic matter in suspension, although capable, apparently, of causing a hyperplasia of the gland, at least in animals, has not been proved the cause of endemic goiter as seen in man.

Fat Soluble Vitamins.—While Drummond cannot give any clear idea, as yet, of the chemical nature of vitamin A, the very highly active fractions he has obtained consist largely of unsaturated higher alcohols, containing in their molecules only the elements carbon, hydrogen and oxygen. The possibility is suggested that the vitamin is actually one of these alcohols. At any rate, one must abandon all ideas of the labile, vitamin being a liable, ill defined compound, as one time imagined, when it is so readily demonstrated that it can survive such drastic chemical treatment as saponification with boiling alkalis and distillation at temperatures over 200 C.

Tubercle Bacilli in Feces.—Two hundred and twenty-five children admitted to Sykes' care either for observation for suspected pulmonary tuberculosis, or with a diagnosis definitely implicating the lung, have had their feces examined for tubercle bacilli as a matter of routine. In addition, and as controls, a number of patients with tuberculous peritonitis, cervical adenitis and children not suffering from tuberculous disease have also been investigated. Evidence is submitted to show that there is little doubt that the acid-fast bacilli found in the feces of children suffering from pulmonary tuberculosis are tubercle bacilli. Further, it would appear that in the majority of cases in which bacilli are thus found, they are derived from sputum which has been swallowed. The possibility of such bacilli being derived from tuberculous ulceration of the intestine has been considered, and though the evidence is small, it is such as to suggest that this is not frequently the source. Tubercle bacilli, if present in the sputum, can be demonstrated in the feces in 100 per cent of cases. In no case in which the sputum on repeated examination was negative for tubercle bacilli were these bacilli found in the feces. In children suffering from pulmonary tuberculosis, tubercle bacilli can frequently be found in the feces when no sputum can be obtained for examination.

Medical Journal of Australia, Sydney

1: 1-28 (Jan. 2) 1926

Some Medical Aspects of Workers' Compensation Insurance. N. C. K. Lane.—p. 1.
Hydatid Cysts of Lung: Surgical Treatment. W. J. S. McKay.—p. 7.
*Unusual Case of General Paresis. C. Henry.—p. 13.

General Paresis of Long Duration.—Henry reports a case of general paralysis of the insane of over eleven years' duration without remission. The man, aged 35, had had syphilis. Ten months before admission he first noticed the symptoms, which consisted of hearing women's voices coming from the back of his head—which kept him awake at night. He became depressed and apathetic; he thought spirits went inside him and then ran away and laughed and mocked him. He thought that a woman brought him poison in a spoon. His speech was thick and slurred and his tongue was tremulous; there was syllable stumbling and elision of words. Reflexes were normal. Death occurred suddenly while the patient was lying in bed. At the postmortem examination, the cerebrospinal fluid was found much increased in quantity; the brain was very large; there was definite chronic leptomeningitis and on the floor of the fourth ventricle there was hypergliosis. The aorta descendens was the site of an aneurysm the size of the clenched fist. This had ruptured into the right pleural cavity, which contained the whole blood content of the body.

1: 55-90 (Jan. 16) 1926

Report of Royal Commission on Health.—p. 55.

1: 91-120 (Jan. 23) 1926

Communicable Diseases Common to Man and Animals. M. Henry.—p. 91.
Id. Tetanus, Botulism, Anthrax. H. R. Seddon.—p. 93.
*Incidence of Echinococcus Granulosus (Batsch) or Hydatid Disease in New South Wales. I. C. Ross.—p. 97.

Incidence of Hydatid Disease in New South Wales.—In one district reported on by Ross, about one third of the cattle, sheep and dogs examined were infested with echinococcus. Two hospitals in this district reported that in the last quinquennial period, 1920-1924, the ratio of human infestation was about 1:137. In another district, 50 per cent of cattle, 60 per cent of sheep and 10 per cent of dogs were infested. The ratio of human infestation was 1:309. Ross says that echinococcus incidence is on the increase in these districts.

Medical Journal of South Africa, Johannesburg

21: 125-150 (Dec.) 1925

Case of Facial (Jaw) Deformity. C. F. Beyers and T. B. Berry.—p. 127.
Case of Double Strangulated Hernia. W. Welchman.—p. 131.
Isolation of B. Typhosus in Case of Periostitis Twenty-Four Years After Attack of Enteric Fever. R. N. Johnson.—p. 132.

National Medical Journal of China, Shanghai

11: 399-498 (Dec.) 1925

*Scarlet Fever Problem in Far East. Lin Chia Swee and H. M. Jettmar.—p. 399.
Public Health Aspects of Narcotic Problem. L. T. Wu.—p. 413.
Diagnosis and Treatment of Cholera. C. V. Yui.—p. 426.
Cholera Cases Treated in Municipal Isolation Hospital for Chinese, Shanghai, 1925. R. N. McKinsey and F. D. Zau.—p. 434.
Study of Parasitic Amebas by Experimental Cross Infection of Laboratory Animals. S. F. Chiang.—p. 440.

Scarlet Fever in Far East.—Lin and Jetmar found *Strepococcus haemolyticus* in every one of eighteen cases of scarlet fever investigated. Fifteen showed the organism in practically pure culture. The incidence of scarlatina in northern China is high, both morbidity and mortality showing a higher percentage than in countries of the same latitude in Europe and America. Out of 1,275 Dick tests on the Chinese population in Harbin, those tested ranging in age from 1 to over 30 years, positive reactions were obtained in 47.7 per cent.

South African Medical Record, Cape Town

24: 1-24 (Jan. 9) 1926

Criminal Responsibility in Relation to Mental Disease. J. T. Dunston and R. F. A Hoernle.—p. 2.
Infections of Kidney. A. Radford.—p. 10.
*Tannins as Intestinal Astringents. J. W. C. Gunn.—p. 11.
*Mercurochrome, Intravenously, in Treatment of Chronic Septic Endocarditis. A. W. Falconer.—p. 14.

24: 25-46 (Jan. 23) 1926

Roentgen-Ray Therapy. F. W. Weber.—p. 27.
Injuries and Accidents of Childbirth. H. E. Allanson.—p. 30.
Action of Vinca (Periwinkle) on Blood Sugar of Rabbits. D. Epstein.—p. 35.
Two Cases of Partial Gastrectomy. R. L. Daly.—p. 38.
Case of Gastrectomy. J. J. Levin.—p. 39.

Tannins as Intestinal Astringents.—The behavior of tannic acid in the intestine is discussed by Gunn and certain clinical observations are quoted. In mild cases of diarrhea, tannic acid would seem unnecessary. In severe cases, especially when the large intestine is affected, it is useless.

Mercurochrome in Treatment of Chronic Septic Endocarditis.—Falconer reports three cases of subacute malignant endocarditis in which mercurochrome-220 soluble was administered. In two of the cases, mercurochrome appeared to produce a definite temporary improvement, as evidenced by a definite effect on the pyrexia, diminution in the size of the spleen, disappearance of the Osler's nodules, and an improvement in general appearance and feelings of the patient; but in neither case did it avert the fatal issue, or materially prolong life. In both cases it produced considerable reaction with severe intestinal irritation and high pyrexia.

Tohoku Jour. of Exper. Medicine, Sendai, Japan

6: 395-643 (Dec. 28) 1925

*Precipitins of Hemoglobin. T. Ishikawa and K. Sakurabayashi.—p. 395.
Meningococcus. I. Variability. S. Kondo.—p. 399.
II. Agglutination Types. S. Kondo.—p. 415.
III. Relation of Agglutination and Sugar Fermentation. S. Kondo.—p. 424.
Relationship Between Proteins of Various Organs. K. Sakurabayashi.—p. 427.
*Effect of Nicotine on Rate of Epinephrine Output. T. Sugawara.—p. 430.
Liver Function Tests. I. Widal's Hemoclastic Test. T. Oka.—p. 459.
Id. II. Bile Pigment. T. Oka.—p. 489.
Basal Metabolism and Minute Volume. II. Vegetative Nervous System. T. Odaira.—p. 523.
Id. III. Thermal Puncture and Effect of Antipyretics, Hormones and Vegetative Nerve Poisons. T. Odaira.—p. 534.
Thermostabile Bactericides of Blood Serum. Y. Ikegami.—p. 565.
*Urea-Nitrogen Concentration of Blood. I. K. Tashiro.—p. 601.
*Id. II. Effect of Caffeine on Blood Urea-Nitrogen Concentration. K. Tashiro.—p. 630.

Precipitins of Hemoglobin.—Ishikawa's and Sakurabayashi's investigations are interpreted as showing that the liver and kidney are biologically related; hence, they contain similar antigen.

Effect of Nicotine on Epinephrine Output.—Sugawara's observations show that nicotine, intravenously injected (from 0.025 to 0.5 mg. per kilogram of body weight), called forth, in the first place, a remarkable, but very briefly continued, augmentation of the epinephrin output from the suprarenals of cats. The augmentation began very soon after the injection and continued, as a rule, over about one minute and not longer than two minutes. It was then replaced by the depressant stage, which lasted many minutes. At the time of maximum depression, no epinephrine could be detected in some cases. The epinephrine output of cats whose splanchnic nerves were divided showed also the same tendency against nicotine. Nicotine acts on the suprarenal medulla itself.

Urea Nitrogen Concentration of Blood.—When a normal rabbit is bound, its blood urea-nitrogen concentration increases. After about thirty minutes' fixation, the blood urea-nitrogen content commences to increase during the binding, but in most cases it reaches the maximum in from thirty minutes to an hour after the release, thence making a gradual fall, but not reaching its original value until after two or three hours. A long duration of binding brings about a gradual increase of the blood urea-nitrogen concentration, which is often to be seen doubled after from three to five hours. Tashiro terms this phenomenon "fixation-hypercarbamidemia." This hypercarbamidemia appears lessened in animals previously vagotomized, and if the vagi are cut in the course of binding, the increase of the blood urea-nitrogen concentration is stopped. From these facts it can be concluded that "fixation-hypercarbamidemia" is attributed to the central stimulation of the vagus.

Effect of Caffeine on Blood Urea Nitrogen Concentration.—Tashiro asserts that a small dose of caffeine (0.05 Gm.) increases the blood urea-nitrogen concentration in a rabbit. The increase of the blood urea-nitrogen content caused by caffeine is not only arrested, but rather turns to decrease, by paraldehyde. The blood urea-nitrogen content is not augmented by caffeine in atropinized or vagotomized rabbits; it is rather lessened. Caffeine-hypercarbamidemia is caused by the stimulation of the vagus centers. A large dosage of caffeine gives rise to the decrease of the blood urea-nitrogen concentration.

Tubercle, London

7: 209-264 (Feb.) 1926

Tuberculosis: Retrospect. A. Adams.—p. 209.
Bacterial Counts in Grade A (Tuberculin Tested) Milk. S. R. Gloyne.—p. 213.
*Experimental Immunization Against Tuberculosis in Guinea-Pig by Use of "Oleo-Vaccine." W. J. Tulloch.—p. 218.
Workshops for Tuberculous Men and Women. J. A. Struthers. C. W. Mutt.—p. 221.
Artificial Pneumothorax Apparatus. R. J. Duthie.—p. 224.
Intestinal Tuberculosis. L. Brown and H. L. Sampson.—p. 228.
Metallic Sound in Thorax. H. M. Kinghorn.—p. 235.

Experimental Investigation Against Tuberculosis.—Investigations dealing with the influence of oils on *Bacillus tuberculosis* are reported by Tulloch. The most important finding is: that exposure of dry living tubercle bacilli to olive oil having an acid value of 0.75 per cent—reckoned as oleic acid—for four days at 37 C. caused death of the bacilli. At least as much bacillary substance as 1.5 mg. (wet weight) per cubic centimeter of oil could be thus treated with the assurance that the product so obtained was noninfective for guinea-pigs. Experiments with guinea-pigs showed that bacilli so treated possess immunizing properties. Five guinea-pigs having previously been immunized with this oleovaccine were resistant to infection with dried tubercle bacilli.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 123-158 (Jan. 29) 1926

*Phrenicotomy. H. Dufour.—p. 123.
Special Form of Scoliosis. M. Mayer and C. Testu.—p. 124.
Radiography of Tuberculous Pelviperitonitis. Sicard et al.—p. 127.
Insufficiency of the Right Ventricle of the Heart. Moussoir.—p. 129.
*Hemorrhagic Purpura in Myeloid Leukemia. Chauffard et al.—p. 132.
Paroxysmal Form of Adams-Stokes Syndrome. E. Donzelot.—p. 137.
*The Fixation Abscess. J. Comby.—p. 144 and p. 159.
*Histology of Raynaud's Disease. Grenet and Isaac-Georges.—p. 151.
*Amebiasis. N. Fiessinger and G. Parturier.—p. 153.

Phrenicotomy.—Dufour reports two cases of phrenicotomy. One patient, aged 33, had recurring bronchitis and dilatations of the bronchi, at the base of the right lung. Adhesions contraindicated pneumothorax. The other patient, aged 53, was affected with partial pyopneumothorax just above the right diaphragm. No improvement was noted in either case during the months to date since the operation.

Hemorrhagic Purpura in Myeloid Leukemia.—Chauffard, Clément and Jonesco report a case of hemorrhagic purpura in a patient, aged 51, presenting myeloid leukemia and splenomegaly for two and a half years. The disease had developed in three successive attacks, each having been checked by application of roentgen rays to the spleen. The hemorrhagic purpura, complicating the leukemia, caused death in about three weeks. They emphasize that the pathogenesis of hemorrhagic syndromes in myeloid leukemia is still unknown, but they point to the fact that the patient's spleen had been exposed thirty-three times to the roentgen ray, within two and a half years.

The Turpentine Fixation Abscess.—Comby recalls that the turpentine fixation abscess was first used by Fochier in puerperal septicemia, twenty-five years ago. The treatment became popular and was soon applied in obstetric cases with even slight fever. On account of the extreme painfulness of

the fixation abscess, also its uselessness, the method was given up and forgotten. Twenty years later Netter attempted to treat epidemic encephalitis with the fixation abscess. Other physicians used the method not only in acute encephalitis, but also in meningitis, poliomyelitis and postencephalitic parkinsonism. Then came the turn of bronchitis, pneumonia and various infections, influenza, typhus and typhoid. The fixation abscess is being employed for infants as well as for patients of 80. Intolerable pain and fever are not the only inconveniences of the method; sometimes the abscess becomes too large, causing extensive sloughing of the skin, and scarring. In Comby's opinion the barbarous method should be entirely suppressed; he never witnessed any benefit from it.

Histology of the Arterioles in Raynaud's Disease.—Grenet and Isaac-Georges examined the vessels in pieces of skin removed from the affected fingers of three patients with Raynaud's disease. There were lesions testifying to inflammation of the arterioles. This seems to confirm that mere vasoconstrictor spasm cannot induce gangrene, while arteriolitis may be the causative factor of the disease. Two of the patients were syphilitic; in the third the Raynaud's syndrome appeared after a mild infection. These facts may indicate the origin of the vascular changes.

Case of Urinary Amebiasis.—Fiessinger and Parturier observed a case of hemoglobinuria with hemolytic jaundice and splenomegaly in a man, aged 25. The ameba was found in the urine. Evidently the amebiasis was responsible for the hemolytic process; it was probably located in the renal parenchyma. A history of enteritis revealed invasion of the organism by the intestinal tract. All the pathologic phenomena disappeared under emetine treatment.

50: 159-200 (Feb. 5) 1926)

Beneficial Action of Fixation Abscess. E. Feuillié.—p. 161.
*Hemorrhagic Conditions in Leukemias. P. Emile-Weil.—p. 165.
Lipiodol in Treatment of Tuberculous Pericarditis. Lemaire.—p. 166.
*Three Cases of Phrenicotomy. P. Moure et al.—p. 168.
Comparative Tests for Tubercle Bacillus in Sputum. G. Caussade and Cribier.—p. 175.
Primary Aspergillosis of the Lung. Macaigne and P. Nicaud.—p. 183.
*Two Cases of Meningoneuritis. J. Ramadier.—p. 193.
Case of Malta Fever. E. Sergent et al.—p. 197.

Fatal Hemorrhagic Conditions in Leukemia.—Emile-Weil knows of a case of chronic lymphatic leukemia complicated by fatal hemorrhagic purpura. He believes that large and repeated doses of roentgen rays may be incriminated for the hemorrhagic condition, inducing an acute attack of leukemia or pernicious anemia. Septic infection, usually occurring with this disease, may also play a certain rôle in genesis of the hemorrhage. Examination of the blood before each exposure will allow suspension of the roentgen-ray treatment at the right time, and thus avert this dangerous complication.

Three Cases of Phrenicotomy.—Moure, Cantonnet and Lebée applied phrenicotomy in two cases of bronchiectasis confined to the base of the lung, and in a case of a tuberculous process in the middle lobe. The improvement was only partial in the two cases with dilation of the bronchi. The third case is recent, and the results are still uncertain. Phrenicotomy should be used cautiously, since the paralysis of the half of the diaphragm may persist permanently.

Meningoneuritis of the Eighth Cranial Pair.—Ramadier describes two cases of complete and bilateral deafness with disappearance of vestibular reactions in subjects with acquired syphilis. Loss of hearing may be the first and sole manifestation of the neurosyphilis. Lesions involving the eighth cranial nerves are associated with a meningeal reaction. Thus the ear affection may be called "syphilitic meningoneuritis." While in one instance the syphilis had not been treated, in the second case the deafness appeared in the course of mercury treatment. Bismuth may be the treatment of choice in these cases.

Clinique, Paris

20: 365-384 (Nov.) 1925

*Duration of Anaphylaxis. A. David and P. Williatte.—p. 365.
Stenosis of the Pylorus in Infants. M. L. Ombredanne.—p. 367
Ultraviolet Rays in Surgery. M. Zalewski.—p. 368.
Treatment of Dyspepsia. L. Pascault.—p. 372.
Occult Contagious Syphilis in Women. P. Aliamet.—p. 376.

Anaphylactic Sensitization Persisting for Nineteen Years.—An editorial comments on a case recently published elsewhere. In treatment of grave menorrhagia a young woman was given 10 cc. of horse serum (antitetanus serum) following an injection of ergotin. This induced in less than one minute a very severe anaphylactic shock, only temporarily relieved by epinephrine injections. It did not subside completely until late the next day. Phenomena of serum sickness and urticaria kept the patient in bed for two weeks longer; complete recovery not occurring until after two months. Inquiry revealed that the woman had been treated with diphtheria antitoxin at the age of 2. The interval between the sensitizing injection and the injection unleashing the anaphylaxis was thus nineteen years. This seems to be the longest duration of an anaphylactic condition recorded to date. It is advisable to fraction the antiserum in adults having had a similar injection in childhood. No more than 1 or 2 cc. should be administered at the first injection; waiting a few minutes before injecting the rest.

Gynécologie et Obstétrique, Paris

12: 437-512 (Dec.) 1925

Suprarenal Syndrome at Childbirth. A. Fruhinsholz.—p. 437.
*Large Cysts of the Urachus. M. Patel and R. Labry.—p. 449.
Pushing Back the Coccyx to Aid Delivery. P. Trillat.—p. 464.
The Urine in Pregnancy Pyelonephritis. Le Lorier and Fisch.—p. 467.
*Treatment of Retroversion of the Uterus. Luque.—p. 476.

Closed Cyst of the Urachus.—Patel and Labry operated on an abdominal tumor in a woman, aged 37. The tumor, diagnosed as an ovarian cyst, proved to be from cystic dilatation of the urachus. No traces of the vesical and umbilical openings existed, and the cyst appeared entirely closed. About ten similar cases have been recorded to date. The diagnosis was not established until operation or necropsy, since there were no symptoms except those from compression by a tumor. The cyst has no tendency to resorption and spontaneous cure. Intracystic hemorrhage is the most frequent complication; it is associated with abdominal pain suggesting torsion of an ovarian cyst. Peritoneal adhesions are frequent in these cases. Puncture of the cyst is contraindicated, as the fluid reappears very rapidly. Over 70 liters of the intracystic fluid were removed in Hoffmann's case, and 50 liters more were found at necropsy. Extirpation of the cyst, also of the adherent part of the peritoneum, is the proper treatment. No fatalities occurred after the operation; the cure was rapid and permanent.

Treatment of Uterine Retrodisplacement.—With Luque's method for correction of uterine retrodisplacement, he makes a Pfannenstiel incision, takes up a loop in each round ligament, and then draws these loops through the upper part of the aponeurosis, and sutures the loops together. This allows upward extension of the uterus during a pregnancy later. The abdominal route should be preferred since this allows surgical treatment, at the same time, of associated lesions of the adnexa. The curved Pfannenstiel incision is superior to the vertical, while it seems to prevent postsurgical hernia, and leaves an almost invisible scar. This incision is especially indicated in women with fat abdominal walls. The operation is rapid, and the results, he says, are excellent. His experience includes many cases of sterility from uterine retrodisplacement, in which the operation was followed by normal pregnancy and childbirth. He has used this method exclusively in the last four years, calling it the Luque ligamentopexy. He gives seven illustrations of the technic.

Paris Médical

59: 141-156 (Feb. 13) 1926

Should Malta Fever Be Reclassified? A. M. Cayrel.—p. 141.
*The Psychology of Biliary Disease. G. Parturier.—p. 148.
The Luxeuil Hot Vaginal Douche. H. Dausset and Gérard.—p. 152.
Sleeping Sickness in Equatorial Africa. M. Leger.—p. 154.

The Psychology of Patients with Biliary Disease.—The nervous disorder accompanying disease of the biliary apparatus may include sleeplessness, also dyspepsia or malaise after the noon meal. About 50 per cent of the patients usually wake up about 2 a. m. and do not fall asleep again till late

in the morning. The discomfort after meals consists chiefly in excessive fatigue, somnolency and intellectual exhaustion. The general condition of the patients may remain good, if it is possible for them to sleep in the morning and afternoon, as long as wanted. Otherwise they lose soon in weight, become mentally depressed, incapable of doing any work. The treatment consists in sufficient rest and sleep, full hot baths in the evening (36.5 or 37 C.) for ten or fifteen minutes, the proper diet, and small doses of peptone, from 0.10 to 0.50 Gm., half or an hour before each meal, to aid in desensitization against the evident tendency to protein shock.

59: 157-192 (Feb. 20) 1926

Respiratory Diseases in 1926. P. Lereboullet and M. Lelong.—p. 157.
The Oleothorax. F. Bezançon et al.—p. 167.
Pneumonia in Children. Ribadeau-Dumas and Cathala.—p. 170.
*Phrenicotomy in Lung Disease. A. Maurer.—p. 179.
*Asthma and Ultraviolet Rays. P. Duhem.—p. 190.

Phrenicotomy in Pulmonary Disease.—Maurer's experience includes thirty-two cases of phrenicotomy. It was applied for pulmonary tuberculosis in twenty-two; bronchiectasis in six; and gangrene of the lung in four. Phrenicotomy is preferably indicated in unilateral lesions of the lung, confined to the base; in cases with a cavity in the lung, and in the slowly developing form of tuberculosis. The operation may be made when pneumothorax is contraindicated on account of adhesions, and thoracoplasty on account of poor general condition. No operative complications occurred in the thirty-two phrenicotomies. The results in tuberculosis were encouraging; no conclusions can yet be made as to the other cases, since they are recent and few in number.

Ultraviolet Rays in Treatment of Asthma.—Duhem asserts that ultraviolet rays may be useful in asthma in children if only small doses are applied. The first exposure should not surpass two minutes; the next two are prolonged each by two minutes, six minutes being the maximum. The treatment should be dropped if four or five exposures do not induce an improvement; the series may be repeated after a long interval. One child was completely cured, six greatly improved, four less markedly. Recurrence of the paroxysms was noted in two; the results were negative in four. Since exposures restricted to six minutes have been used, there has been no recurrence of the paroxysms under the treatment.

Presse Médicale, Paris

34: 225-240 (Feb. 20) 1926

*Bronchopneumonia in Syphilis. S. I. de Jong and Lestocquoy.—p. 225.
*Metastases in the Prostate in Staphylococcemia. Strominger.—p. 226.
The Filtrable Forms of the Tubercle Bacillus. P. Hauduroy.—p. 227.
*Eliminating Power of the Salivary Glands. L. Binet.—p. 229.

Chronic Bronchopneumonia in Congenital Syphilis.—De Jong and Lestocquoy describe a case of chronic bronchopneumonia in an infant, 9 months old. The disease developed in the form of intermittent fever with extremely severe attacks of dyspnea, paroxysmal cough and progressing cachexia. The clinical picture resembled that of asthma or congenital stridor or compression of the respiratory tract by hypertrophied glands. The skin reaction to tuberculin, negative in the beginning, became positive later. Nevertheless the early appearance of rickets; enlargement of the peripheral glands, hyperleukocytosis of the cerebrospinal fluid and hyperalbuminosis, also a partially positive Calmette-Massol test, suggested the diagnosis of syphilis. At necropsy the lesions of the lungs appeared similar to those in syphilitic white pneumonia. There was sclerosis of the lung, perivascular and peribronchial. The failure of the specific treatment may be explained by its lesser efficacy in congenital compared with acquired syphilis. Besides, it was applied late.

Metastasis in the Prostate in Staphylococcus Infection.—Strominger reports four cases of fatal carbuncle with metastatic abscesses in the prostate. In three patients death occurred from staphylococcus septicemia; the fourth died suddenly from ulceration of a metastatic tumor and subsequent perforation of the coeliac artery. He believes that local immunization induced with Besredka's specific dressings in the beginning of the affection might prevent dissemination of the coccus in the blood stream. Vaccination may thus complete the surgical treatment. In abscesses of the prostate, injections of an autovaccine should be added.

Elimination by Way of the Saliva.—Binet reiterates that glucose may be sometimes found in the saliva while uric acid and urea are always present. Examination of the saliva of thirty-four diabetics revealed the presence of glucose in two. The uric acid content of the saliva is constant, and does not depend on the amount of the saliva. Dosage of urea in the saliva of fifty patients with uremia showed from 330 to 1,140 mg. per liter against the normal 23 to 164 mg. Determination of the urea content of the saliva may give instructive findings when it is difficult to obtain blood for examination in children or adults.

Progrès Médical, Paris

1787-1862 (Nov. 30) 1925. Partial Index

Preoperative Vaccination. L. Bazy.—p. 1795.
Hemotherapy and Serotherapy of Cancer. A. Bréchot.—p. 1797.
*Sugar and General Anesthesia. L. Chevrier.—p. 1801.
Mental Disturbances After Operations. H. Codet.—p. 1803.
Postoperative Care of the Mouth. A. Colombet.—p. 1807.
Care Before and After Operations on the Stomach. Desplas.—p. 1807.
Irregular Menstruation. G. Jeanneney.—p. 1809.
Ultraviolet Rays in Dermatology. Jeanselme and Marceron.—p. 1815.
Hydatid Cysts of the Liver. L. Ramond.—p. 1827.
Diabetes and Surgery. F. Rathery.—p. 1845.
*Sodium Citrate in Surgery. M. Renaud.—p. 1847.
Ether Anesthesia by the Rectum. Robineau.—p. 1847.
Tracheobronchoscopy for the Practitioner. A. Soulas.—p. 1851.
Influence of Operations on Menstruation. H. Vignes.—p. 1854.

Sugar in Preparation for Operations.—Chevrier strives to avert the injurious action of anesthetics on the liver cell, inducing sometimes insufficiency of the organ with consecutive cirrhosis. He thinks this can be accomplished by increasing the amount of glycogen in the liver. For this, large amounts of sweets are given before and after the operation. Fluids in abundance, with jam, fruit preserves, highly sweetened decoctions and milk were ordered the evening before, and a cup of the sweetened decoction again two hours before the operation. Drip proctoclysis with a 4.8 per cent solution of glucose was arranged after the operation. Contrary to the routine opinion, anesthetics seemed to be better tolerated with this method than when given on an empty stomach. The postoperative by-effects were less pronounced but vomiting still occurred occasionally; the cholemia soon disappeared.

Indications for Sodium Citrate in Surgery.—Renaud reiterates that intravenous injections of sodium citrate not only prevent hemorrhage at operations or delivery but are especially effectual in arresting hemorrhages from mucous membranes, such as epistaxis or metrorrhagia. The rise of vascular tension under repeated doses of the drug may be avoided by adding magnesium chloride (sodium citrate 20 parts; magnesium chloride 10 parts; water 100 parts). Usually 25 cc. is injected; sometimes 15 or 20 cc. may answer the purpose. Even 40 cc. seems to be harmless.

Schweizerische medizinische Wochenschrift, Basel

56: 121-144 (Feb. 13) 1926

*Movable Retroflexion of the Uterus. C. Meyer-Wirz.—p. 121.
Ruedi's Discovery of Davos' Climate. G. A. Wehrli.—p. 125.
Urine Amylase. E. Fricker.—p. 129.
Vaccine Encephalitis. G. Blanc and J. Caminopetros.—p. 131.
*Demography of Cancer. A. Renaud.—p. 132. C'en.
Erosion of the Cervix. G. Nordmann.—p. 138.

Movable Retroflexion of the Uterus.—Meyer-Wirz believes—contrary to other clinicians—that a movable retroflexion of the uterus may be the cause of various symptoms. No disturbances were observed in 148 of his material of 507 women with retroflexion. He advises to try a pessary. If it relieves the symptoms, the Alexander-Adams operation is indicated.

Demography of Cancer.—Renaud investigated the Swiss mortality statistics from 1901 to 1920. They are especially valuable because of the regularity of medical help and the exact anonymous death certificate system. Switzerland has about 5,000 cancer deaths a year (12.8 per ten thousand inhabitants or 40.9 per ten thousand people over 40 years of age). This means one cancer death every year among 780 inhabitants, or among 220 that are over 40 years of age. Both sexes are about equally affected. The seeming increase since 1901 is

chiefly due to the better diagnosis of cancer of internal organs. Increased frequency of cancer of the breast is the only inexplicable exception.

Pediatria, Naples

34: 113-167 (Feb. 1) 1926

*Agglutinins After Vaccination Against Typhoid. L. Auricchio.—p. 113.
*Streptococcus Toxin in Scarlet Fever. M. Gerbasi.—p. 119.
Cerebrospinal Fluid Test. G. Taccone.—p. 131.
Asthma from Bronchial Nodes. C. Giaume.—p. 150.
Tuberculous Meningitis. F. Morabito.—p. 160.

Agglutinins After Vaccination Against Typhoid.—Auricchio points to the possibility of diagnostic errors in children who had been injected with the usual typhoid vaccine. Their blood contains the specific agglutinin. No agglutinins were observed in children inoculated with Caronia's dissolved vaccine.

Streptococcus Toxin in Scarlet Fever.—Gerbasi found that serums from individuals without a history of scarlet fever may neutralize in varying degree filtrates from streptococci isolated from scarlet fever patients, as well as from other streptococcic diseases, and even the filtrates from cultures of other microbes (typhoid, melitensis, cocci). Injection of filtrates from hemolytic streptococci from sources other than scarlet fever produced in children reactions similar to those with the Dick toxin. He believes that his experiments lower the value of specificity of the scarlet fever streptococcus, but indicate the necessity for further studies.

Policlinico, Rome

33: 185-219 (Feb. 8) 1926

*Abdominal Spasms and the Metabolism. P. Alessandrini.—p. 185.
Vesicorectal Echinococcosis. G. Giordano.—p. 190.
Torsion of the Gallbladder. S. Marinacci.—p. 194.

Abdominal Spasms and the Metabolism.—Alessandrini attributes many painful colics and diarrhea to a lowering of the blood calcium. He had good results with intravenous injection of calcium chloride.

Riforma Medica, Naples

42: 97-120 (Feb. 1) 1926

Serodiagnosis in Tuberculosis. G. Brovelli.—p. 97.
*Serum Shock. M. Cayrel.—p. 101.
The Murphy Button. V. Pauchet.—p. 103.
Case of Leprosy. E. C. Cavalcanti.—p. 114.

Serum Shock.—Cayrel describes grave anaphylactic symptoms in a robust man, occurring five hours after injection of diphtheria antitoxin. The patient had been treated with a total amount of 600 cc. of antidysentery serum a few years before, and had borne without harm a preventive dose of antitetanus serum. Because the first injection did not cure the diphtheria, the antitoxin was administered again, with all the precautions (calcium chloride internally, fractional doses of the serum increasing from 1 to 20 cc.). In spite of this, a new anaphylactic condition nearly killed him.

Revista de la Soc. Arg. de Biología, Buenos Aires

1: 589-634 (Oct.) 1925

Embryonal Anomaly in a Cow. J. Llambias.—p. 589.
Epinephrine Secretion Under Influence of Salts. B. A. Houssay and E. A. Molinelli.—p. 593.
Hypothalamus Center for Epinephrine Secretion. Idem.—p. 600.
Apparatus for Basal Metabolism Determinations. M. Soto and A. Torino. —p. 613.
Action of Insulin on Basal Metabolism. M. R. Castex and M. Schteingart.—p. 621.
*Spirochetosis in Horses in Argentina. Dios and Zuccarini.—p. 625.
*Trypanosomiasis in Monkeys. L. Dios et al.—p. 627.

First Known Instances of Spirochetosis in Horses in Argentina.—Dios and Zuccarini gave a preventive medicinal injection to a lot of horses from a region where mal de caderas was endemic. The blood of the horses was sterile, but later specimens of blood from six of the horses showed the presence of *Spirochaeta equi*. There were no appreciable symptoms from the spirochetosis.

Trypanosomiasis in Monkeys.—The trypanosomes found in the blood of two monkeys from Paraguay were of the minasense type, but differed slightly from Chagas' description. Microfilarias were also present in the peripheral blood.

Deutsches Archiv für klinische Medizin, Leipzig

150: 127-250 (Jan.) 1926

*Species of Streptococci. W. Lehmann.—p. 127.
Acute Infectious Anemia. K. Eimer.—p. 162.
Electric and Mechanical Stimuli for Gastric Secretion. F. Delhougne. —p. 170.
*Acidity with Gastric Ulcer. N. Loktionowa.—p. 177.
*Permeability and Diabetes. E. Wiechmann.—p. 186.
*Scopolamine and Acid-Alkali Balance. H. Regelsberger.—p. 208.
*Action of Alcohol on the Stomach. K. Leddig.—p. 232.

Species of Streptococci.—Lehmann sees no reason to give up the species specificity of several types of streptococci. The acquisition of a hemolytic property by *Streptococcus viridans*, cultivated on blood agar, may be explained as a character of the viridans, not as proof of unity of streptococci.

Acidity with Different Localizations of Gastric Ulcer.—Loktionowa found that the acidity is usually above normal with ulcers of the pylorus, and below normal with localization in the fundus. She believes that the difference is due to an inhibiting reflex from the ulcer on its surroundings (normally acid secretion in the fundus, alkaline in the pylorus region).

Permeability and Diabetes.—Wiechmann shows again that the blood plasma contains in the majority of diabetes patients more sugar than the erythrocytes, and that injection of insulin is followed by an equal distribution of sugar between these two constituents of the blood. He considers this an indication of the action of insulin on the cell surface, and a confirmation of the theory of diabetes as a disturbance of the permeability of the tissues for sugar. He found also that the concentration of sugar in the plasma from venous blood in diabetes is equal to or higher than in the arterial. This also speaks for a reduced permeability of the capillaries for sugar. The condition is analogous after administration of dextrose. Injection of insulin is followed in diabetes by inversion of the normal proportion of amino-acids in the venous and arterial blood. The latter contains after the injection more than the former.

Scopolamine and Acid-Alkali Balance. — Regelsberger observed an increased alkali reserve and decreased hydrogen ion concentration of the blood after administration of 0.0005 Gm. of scopolamine. With hypersensitive patients (parkinsonism) half the dose was sufficient. The alveolar carbon dioxide pressure was usually lowered, rarely increased. He concludes that the respiratory center is stimulated by the drug. The urine was always alkaline.

Action of Alcohol on the Stomach.—Leddig found a stronger acidity in subacid and hyperacid stomachs after the alcohol test meal than after the Ewald meal. A roll was better digested with alcohol. Admixture of duodenal juice does not change the hydrogen ion concentration much, and it lowers the total acidity only if present in large amount.

Deutsche medizinische Wochenschrift, Berlin

52: 221-266 (Feb. 5) 1926

*Concretion of the Pericardium. M. Kirschner and M. Matthes.—p. 221.
*Typhoid Epidemic. H. Straub.—p. 223.
*Syphilitic Blood Changes. F. Klopstock.—p. 226.
Psychotherapy of Sleeplessness. I. H. Schultz.—p. 229.
Sthenic Diabetic Coma. I. St. Lorant.—p. 231. C'td.
Hyperacidity and Neutralization. M. Seckbach.—p. 233.
*Arsphenamine in Experimental Recurrens. W. Krantz.—p. 234.
Traumatic Scoliosis. C. Göcke.—p. 236.
Pluriglandular Syndrome. D. Mittelmann.—p. 237.
Balneotherapy in Heart Disease. R. Lurz.—p. 237.
Trophic Ulcers in Parkinsonism. E. Hoffmann.—p. 238.
Treatment of Lichen Ruber. U. Novelli.—p. 239.
Treatment of Gonorrhea. K. Ochsenius.—p. 241.
Chemotherapy. R. Schnitzer.—p. 242. C'tn.
Colitis. O. David.—p. 260. C'cn.

Concretion of the Pericardium.—Kirschner and Matthes' patient had the typical signs described by Volhard, namely, weakness of the heart, venous stasis, especially in the liver, ascites, and the typical full veins of the neck and arms even in the erect position and with the arms raised. The jugular veins showed both systolic and diastolic collapse. These symptoms are due to the inhibition of the diastole with obliteration of the pericardial cavity, while a fibrous mediastinopericarditis interferes with the systole. There was only one symptom—dilatation to the right—which differed from the classical picture. The patient improved considerably

after pericardiectomy. It revealed lime incrustation which had not been evident in the roentgen plate.

Typhoid Epidemic.—Straub reports on an epidemic of typhoid in Anklam, and on the endemic occurrences of typhoid in Pomerania—including the seashore resorts.

Syphilitic Blood Changes.—F. Klopstock used alcoholic extracts from cultures of *Spirochaeta pallida* and *Spirochaeta dentium* as antigens for serodiagnosis of syphilis. He claims better results than with organ antigens. Injections of killed cultures of spirochetes produced in rabbits antibodies with a better marked specificity toward his extracts than toward heart extracts. He concludes that the serologic changes in syphilis are induced directly by the spirochetes. If the organ lipoids can be used for the test, this is only because the antibodies against the spirochete induce the production of organ lipoid antibodies.

Arsphenamine in Experimental Recurring Fever.—Krantz confirms Buschke and Kroò's observation on the occasional presence of recurrens spirochetes in the brain of mice treated previously with as much as 0.004 Gm. of neo-arsphenamine.

Deutsche Zeitschrift für Chirurgie, Leipzig

194: 145-288 (Jan.) 1926

Social Insurance and Teaching of Surgery. J. H. Zaaijer.—p. 145.
Results of Treatment of Benign Tumors of the Breast. P. Walzel and F. Starlinger.—p. 152.
Treatment of Diaphragmatic Hernia. O. Uebelhoer.—p. 161.
Ulcer in Traumatic Diaphragmatic Hernia of the Stomach. K. Schaper.—p. 169.
Disturbances After Surgery of Biliary Passages. H. Flörcken.—p. 181.
Rubber Drain to Bridge Gap in Common Bile Duct. K. Gerlach.—p. 195.
*Thoracic Access to Duodenum. H. Kohler.—p. 212.
*Treatment of Fractures of the Spine. A. Mülleder.—p. 220.
Short Femoral Stumps and Prosthesis. C. ten Horn.—p. 234.
*Tumors of Posterior Mediastinum. P. Cokkalis.—p. 244.
Furuncles of Lips. O. M. Chiari.—p. 247.
Dupuytren's Contracture. P. Cokkalis.—p. 256.
Heredity of Dupuytren's Contracture. G. Sprogis.—p. 259.
Malformations of the Feet. Esau.—p. 263.
Congenital Elephantiasis. M. S. Keropijan.—p. 268.
Genesis of Erysipelas. E. Orbach.—p. 276.

Thoracic Access to Duodenum.—Kohler's patient with a perforation of the duodenum came too late to be operated on in the regular way. In such cases an early, although slight, involvement of the left pleural cavity indicates a retroperitoneal abscess. He opened it through the diaphragm with good success.

Treatment of Fractures of the Spine.—Mülleder recommends the Henle-Albee operation in fracture of the spine—especially of the thoracic or lumbar vertebrae. The implant is useless if nervous symptoms persist after laminectomy.

Tumor of Posterior Mediastinum.—Cokkalis reports successful removal of a large fibroma of the posterior mediastinum.

194: 289-421 (Jan.) 1926

*Medical Observations in Paraguay. W. Capelle.—p. 289.
*Protein Cleavage in Burns. R. Eden and E. Herrmann.—p. 303.
*Thoracic Duct in Peritonitis. W. Klug.—p. 310.
Anal Fistula. W. Capelle,—p. 315.
Habitual Dislocation of the Shoulder. F. Böhm.—p. 321.
*Bone Implants in Tuberculous Spondylitis. B. Kipnis.—p. 325.
*Sympathectomy in Spontaneous Gangrene. P. Stradin.—p. 338.
Treatment of Angiomas. E. Glass.—p. 352.
*Blood Picture in Appendicitis. G. Volk.—p. 367.
Dislocation of Cervical Vertebrae. H. Jansen.—p. 390.
Bone Cysts and Syphilis. R. Nissen.—p. 398.
Volvulus of the Small Intestine. A. Schöttle.—p. 401.
Surgery on Convicts. F. Böhm.—p. 407.

Medical Observations in Paraguay.—Capelle found Paraguay free from gout, rickets and the echinococcus. Ulcer of the stomach and cancer of the gastro-intestinal tract are very rare notwithstanding the prevalence of meat (fresh, without spices) in the food. Cancers of other localizations are common. Wounds heal excellently—probably because of the sunny climate. Tuberculosis is rare, although the race is by no means immune.

Protein Cleavage in Burns.—Eden and Herrmann noted increased refraction and viscosity of the blood serum after burns. The sedimentation speed was increased. The hydrogen ion concentration decreased, together with an increase of the potassium ions. The calcium ions decreased, while the total calcium remained constant. They believe that the alkaline cleavage products containing much diamino-acids decrease the calcium ionization and alkalinize the serum. The subsequent preponderance of potassium causes vagotonia.

Thoracic Duct in Peritonitis.—Klug had no therapeutic results with fistula of the thoracic duct in experimental necrosis of the pancreas nor in peritonitis. Dyes injected intraperitoneally only rarely appeared in the lymph of the duct.

Bone Implants in Tuberculous Spondylitis.—Kipnis implants a bone graft in tuberculosis of vertebrae except with hopeless tuberculosis of other organs, amyloidosis or a fistula. He prefers Henle's technic, using sometimes Kausch's modification.

Sympathectomy in Spontaneous Gangrene.—Stradin had good results in obliterating thrombarteritis. He combines sympathectomy with ligation of veins in spontaneous gangrene and intermittent claudication. He reports an experimental sympathectomy made on himself (a young healthy man). No difference between the two extremities was noted a month after the decortication of the brachial artery. Periarterial injection of alcohol may be used, instead of sympathectomy.

Blood Picture in Appendicitis.—Volk admits expectant treatment in appendicitis, if there are no more than 15 per cent neutrophils with "rod-shaped" (narrow, nonsegmented) nuclei, no metamyelocytes, and less than 15,000 leukocytes per cubic millimeter.

Klinische Wochenschrift, Berlin

5: 129-168 (Jan. 22) 1926

Trachoma. H. Krumbach.—p. 129.
*Intracellular Ferments of the Liver. Staemmler.—p. 134.
*Leukocyte Counts. E. F. Müller and W. F. Petersen.—p. 137.
*Glycemia Test with Gastric Ulcer. W. Scharpff.—p. 138.
*Glycogen and Insulin. D. Adlersberg and O. Porges.—p. 142.
Virulence of Vaginal Germs. Louros.—p. 143.
*Treatment of Multiple Sclerosis. W. Sauer.—p. 146.
*Blood Phenol in Uremia. E. Becher and S. Litzner.—p. 147.
*Buffered Water for Romanowsky Stain. M. Bálint.—p. 147.
Tetany and Raynaud's Disease. G. S. Margolin.—p. 148.
General Therapy in Tuberculosis. A. Walder.—p. 149.
Heredity in Pathology. W. Weitz.—p. 153.
*Austrian Rules on Proprietary Preparations. W. Heubner.—p. 166.

Intracellular Liver Ferments.—Staemmler found in vitro that phosphorus inhibits the oxydase and diastase strongly and the liver lipase weakly. When he poisoned mice with phosphorus, the diastase of their liver was only slightly inhibited, while the oxydase action was enhanced and that of the lipase was unchanged.

Peripheral Leukocyte Counts.—Müller and Petersen present evidence of a permanent coupling of the peripheral and splanchnic innervation. They obtained many indications of it in experiments made partly independently, partly in collaboration. The grave hyperinsulinemia from administration of 400 units of insulin to a dog induces a peripheral leukocytosis of sometimes more than 40,000 cells per cubic millimeter. Intravenous injection of 20 cc. of a 20 per cent solution of peptone in this condition reduces it to 1,000 in a few seconds, while it increases the leukocyte content of the internal organs. Waves of this kind can be easily reproduced several times. The permeability of the intestinal capillaries changes parallel with these changes (decrease in internal vasocontriction and the subsequent internal leukopenia or vice versa). Any reaction in either the peripheral or the splanchnic region leads to the opposite reaction in the other. The mature neutrophilic leukocytes always accumulate in the region with parasympathetic predominance and decrease with the sympathetic innervation. The blood counts are the finest indicators of the continuous oscillations in the balance between the periphery and the internal organs.

Test Glycemia with Gastric Ulcer.—Scharpff had found that ingestion of 80 Gm. of levulose in 300 Gm. of water is followed in vasoneurotic patients by an increase of the sugar content of the blood. The ratio to the original level is between 1.3 and 2. In normal individuals the index is 1-1.3. He observed a high index in fifteen patients with ulcers of the stomach or duodenum. He believes that levulose is preferable to the dextrose used by Hijmans van den Bergh und Siegenbeek van Heukelom.

Glycogen Storage and Insulin.—Adlersberg and Porges observed an increase in tolerance in diabetic patients treated

with insulin while on a diet rich in carbohydrates. They consider storage of glycogen in the liver as the aim of insulin treatment.

Treatment of Multiple Sclerosis.—Sauer injected small doses (0.05-0.15 Gm.) of silver arsphenamine or 0.15-0.45 Gm. of neo-arsphenamine twice a week in multiple sclerosis patients. The total amount of the former was 3 Gm.; of the latter 2.8 Gm. A 10 per cent solution of calcium chloride was used sometimes as vehicle. He had better results in these patients than in those treated with physical measures.

Blood Phenol in Kidney Insufficiency.—Becher and Litzner found free phenols in the blood not only in the last stage of uremia, as Becher formerly assumed, but also in lighter stages of insufficiency of the kidneys. They may even disappear from the blood temporarily.

Buffered Water for Romanowsky Stain.—Bálint recommends as optimal a phosphate buffer of a $p_H = 6.8$-7.0 for dilution of the stain and washing of the slide.

Austrian Decree on Proprietary Preparations.—Heubner extols the new Austrian regulations in regard to proprietary preparations. He admires the courage and energy expressed by the decree in its intention to "clean the Augean stables." He points out that the decree follows the rules of the Council on Pharmacy and Chemistry of the American Medical Association as well as the principles which were embodied in the resolutions of the commission on drugs of the German Congress of Internal Medicine, of which he has been a leading member.

5: 169-208 (Jan. 29) 1926

Quinine Therapy. K. Junkmann and E. Starkenstein.—p. 169.
*Blood Proteins in Diseases. G. Leendertz.—p. 175.
*Intestinal Regulation of Acidity. W. Löffler.—p. 179.
*Albuminuria of the New-Born. E. Faerber.—p. 181.
A Year of Goiter Prevention. K. Lang.—p. 182.
*Contagiousness of Measles. F. Redlich.—p. 186.
"Nonsurgical Biliary Drainage." Z. Rausch.—p. 187.
"The Blood Sugar in Tuberculosis." W. Landau.—p. 189.
Reply. P. Hecht.—p. 190.
*Biologic Action of Rays. H. Cramer.—p. 190.
*Resorption and Insulin. O. Koref and H. Mautner.—p. 191.
*Lymphogranulomatosis in Child. H. Gysi.—p. 191.
Pylorospasm. Heile.—p. 192.
Heredity. W. Weitz.—p. 193. C'cn.
Vital Statistics in Scandinavia. K. Freudenberg.—p. 206.

Blood Proteins in Diseases.—Leendertz compares the amount of the protein precipitated by diluting the serum with nine volumes of a 0.025 per cent solution of acetic acid with the total proteins. The ratio indicates the relative increase in the most labile protein of the serum.

Intestinal Regulation of Acidity.—Löffler found with Schaudt and Helzer compensatory changes of the hydrogen ion concentration of the feces after intravenous and oral administration of alkaline or acid substances. The reaction of the feces changes within one or two hours after ingestion, before the substance can diffuse directly to the end of the column of feces.

Albuminuria of the New-Born.—Faerber's observations and experiments explain albuminuria occurring in the first few days of life as a sequel of dehydration. Daily administration of any fluid (9 or 10 per cent of the body weight) prevents or cures the condition.

Contagiousness of Measles.—Redlich publishes evidence which sustains the opinion that measles is not contagious later than twenty-four hours after the appearance of the eruption.

Biologic Action of Rays.—Cramer stained the mesentery of living frogs and rats with trypan blue or crystal violet. The color disappeared more rapidly in the living tissue under the influence of roentgen rays and radium. The tint persisted in the dead tissues, and in frogs injected in the winter months. He agrees with Ellinger and Landsberger's explanation of the process as a catalysis of the oxidation.

Resorption and Insulin.—Koref and Mautner had observed that the gastro-intestinal tract of rats fed with 5 cc. of water, milk or even of an 8 per cent solution of magnesium sulphate, and injected with insulin, was empty within an hour. Alcohol acts more rapidly in insulin animals. Curare, which normally is inactive when administered by the mouth, kills the insulin animal. They conclude that insulin accelerates remarkably the resorption from the gastro-intestinal tract.

Lymphogranulomatosis in Child.—Gysi reports a case of lymphogranulomatosis in a neuropathic boy, 11 years old. He had 32,000 leukocytes per cubic millimeter. Of these, 58.5 per cent were eosinophilic polymorphonuclears; 9 per cent eosinophilic myelocytes; 3.5 per cent neutrophils; 7.5 mast cells, and 1 per cent monocytes. The clinical symptoms had begun with a skin eruption.

5: 209-248 (Feb. 5) 1926

*Comparative Anatomy of Encephalitis. E. Joest.—p. 209.
*Fat in Nervous System. J. Berberich.—p. 211.
*Surface Tension of Serum. K. Beckmann.—p. 215.
*Diabetic Coma. I. St. Lorant.—p. 216.
*Phases of Hormone Action. V. M. Kogan et al.—p. 221.
Treatment of Wounds. A. Ritter and Klingenfuss.—p. 224.
Adhesive Pleurisy with Pneumothorax. Unverricht.—p. 227.
Alkali Reserve in Athletes. Full and Herxheimer.—p. 228.
Fibrous Osteitis and Osteomalacia. F. J. Lang.—p. 238.
A Parasite in the Male Urethra. H. Sternberg.—p. 229.
Spontaneous Pneumothorax. H. Dorendorf.—p. 230.
Physicians for Adolescents. Rüdel.—p. 233.

Comparative Anatomy of Encephalitis.—Joest points to encephalitis in animals, especially in horses, dogs and sheep, and to hydrophobia. It seems that they have an etiologic kinship with the human encephalitis. In all of them inclusions have been found in the ganglion cells.

Fat in Nervous System.—Berberich concludes that the development of myeline nerve sheaths occurs in the medulla and probably in the whole nervous system without any aid by cells containing fat. The latter have a pathologic significance.

Surface Tension of Serum.—Contrary to other workers, Beckmann found considerable variations of surface tension of serum after meals and in different forms of edema.

Diabetic Coma.—Lorant points to the published cases of diabetic coma without ketonuria, and adds another in a young diabetic patient. He concludes that this refutes both the acidosis theory and the theory of a specific toxic action of beta-oxybutyric acid. He thinks that a disturbance localized somewhere in the cleavage of carbohydrates is the cause of coma. Where the muscles are intact (young diabetics), insulin helps. In the elderly, with changes in the heart ("sthenic type"), the prognosis is grave. Premonitory edema of the ankles had been observed in all the cases in which insulin did not help.

Phases of Hormone Action.—Kogan, Kamenew and Mantz used the salivary secretion in their studies on the interrelation of injections of insulin, epinephrine, potassium and calcium. They found that the interval between the injections and their sequence is more important than the dosage. These phases of action depend not on one factor but on the totality of the conditions under which the hormones act.

Medizinische Klinik, Berlin

22: 199-238 (Feb. 5) 1926

Work in Tuberculosis. E. Guth.—p. 199.
Psychopathic Children. Mönkemöller.—p. 202. C'td.
Psychotherapy in Urology. J. J. Stutzin.—p. 204. C'cn.
Treatment of Syphilis. M. Oppenheim.—p. 207.
Treatment of Syphilis. G. Scherber.—p. 208.
Diphtheria and Syphilis. F. Reiche.—p. 210.
*Peripheral Metabolic Disturbances. S. Frey.—p. 212.
*Degkwitz' Measles Serum. W. Kaupe.—p. 213.
Necrosis of External Meatus. W. Schramek.—p. 213.
Postoperative Parotitis. Wehmeyer.—p. 215.
"Gastric Secretion." E. Leschke.—p. 217.
Experimental Syphilis. Uhlenhuth and H. Grossmann.—p. 217.
*Latent Syphilis and Divorce. J. Heller.—p. 218.
Disinfectants. V. Gegenbauer.—p. 220.
Electrophysical Treatment. B. Berliner et al.—p. 223. C'cn.
Contusion of the Spine. A. Sigl.—p. 224.

Peripheral Metabolic Disturbances.—Frey injects 1 cc. of a 1 per cent solution of fluorescein sodium subcutaneously, and takes at intervals of one minute the blood from the proximal vein. The dye appeared in the blood one or two minutes later on the leg with ulcers than on the arm.

Degkwitz' Measles Serum.—Kaupe used Degkwitz' serum on three children who had never had measles and on fifteen

with probable, but not certain, history of measles. He injected it, as Degkwitz advised, on the fifth day after the appearance of the rash in the child who was the source of the infection. The three susceptible children developed typical measles. Four of the fifteen others had serum sickness. He advises against the use of this serum in prevention of measles.

Latent Syphilis and Divorce.—Heller discusses a recent decision of the German supreme court. It declared that syphilis which in all probability had been cured before the marriage was not sufficient grounds for divorce. A former decision of the same court, while confirming the divorce in a similar case, took the same attitude toward a man who had been declared cured by a physician as toward a man who did not know that he had syphilis.

Mitteilungen a. d. Grenzgeb. der Med. und Chir., Jena

39: 1-162, 1926

*Chronic Character of Peptic Ulcer. K. Walko.—p. 1.
*Thyroidectomy. B. Breitner et al.—p. 45.
*The Soft Palate. P. Neuda.—p. 51.
Primary Lung Tumors. M. Brandt.—p. 74.
*The Goiter Question. P. Schmitz-Moormann.—p. 82.
Sedimentation Test in Arthritis. M. Holzweissig.—p. 117.
Hydronephrosis and Contracted Kidney. Z. Kairis.—p. 138.
*Tenderness of Testis from Injury of Kidney. J. Severin.—p. 149.

Chronic Character of Peptic Ulcer.—Walko found no parallel changes between the subjective disturbances and remissions and the secretory, motor or roentgen symptoms of gastric and duodenal ulcers. He believes that the periods of pains and subjective latency are due only to changes of sensitization of the vegetative nerves of the organ.

Thyroidectomy.—Breitner, Nobel and Rosenblüth determined the basal metabolism in thirty-two adolescents and young adults who had had an operation on the thyroid from one to three years previously. They conclude that with a correct surgical technic there is no danger of hypothyroidism.

The Soft Palate.—Neuda describes changes in the soft palate in various diseases of the gastro-intestinal apparatus. They are more distinct and diagnostically more valuable in young adults than in the elderly. He observed a redness of the soft palate in the majority of patients with ulcers of the duodenum. This corresponds to G. A. Friedmann's finding of polycythemia in many such patients. Ulcers of the stomach or jejunum or appendicitis present no such changes. A yellow color (near the raphe and border of the hard palate) is characteristic of disease of the liver, especially of parenchymatous changes in cholelithiasis and syphilis. In the latter, the blood vessels are frequently indistinct because of a fatty infiltration. A bronzed and yellow discoloration aided him once in the correct diagnosis of pancreatitis complicating gallstone disease. It occurs even in acute cases. He believes that the soft palate represents the beginning of the entodermal layer, and therefore is subject to similar changes as the rest of the gastro-intestinal tract.

The Goiter Question.—Schmitz-Moormann examined the thyroids in the goiter zone of Baden. The percentage of iodine increases slowly from birth to old age (up to 1 mg. per gram of dry substance) and is lower than in regions where the iodine content of the soil is normal. The total content is the same as in normal thyroids. It seems that the enlargement of the gland serves to increase the absorbing surface for the iodine. The growth of a diffuse colloid goiter stops when the iodine content is increased by medication to about 1.7 per gram of dry substance. Parenchymatous goiters contain more water than colloid goiters.

Tenderness of the Testis from Injury of the Kidney Region.—Severin observed in war injuries of the kidney region the same extreme tenderness of the homolateral testis as in kidney colics. The scrotum is not hypersensitive.

Münchener medizinische Wochenschrift, Munich

73: 181-226 (Jan. 29) 1926

*Serum Prophylaxis of Measles. R. Degkwitz.—p. 181. C'cn, p. 248.
*Experiences with Measles Antiserum. O. Wiese.—p. 184.
*Syphilis Infection from the Cadaver. E. Hoffmann.—p. 185.
*Alimentary Glycemia and Water Metabolism. O. Klein and E. Lang.—p. 187.
*Breathing Type and the Body. E. Hörnicke.—p. 190.
Meinicke Microtest. J. Burtscher.—p. 192.
Prosthesis After Amputation of the Thigh. E. Schilcher.—p. 194.
Climacteric Disturbances. Zöckler.—p. 196.
Duodenal Pylorus Reflex. T. Bársony.—p. 197.
Reagent for Purity of Arsphenamine. A. Hirsch.—p. 197.
Allergic Conditions in Syphilis. S. Bergel.—p. 198. C'cn.
Obstetric Twilight Sleep. R. Kuhn.—p. 201.
*The Furnishing of Drugs. T. Meinecke.—p. 203.
Sanatoriums for Tuberculous Children. F. Lange.—p. 204.
Recuperation Colonies for City Children. L. v. Seht.—p. 206.

Serum Prophylaxis of Measles.—Degkwitz infected monkeys and sheep repeatedly with filtrates from the nasopharyngeal secretion of measles patients or with tissue cultures inoculated with the virus. He made no attempts to isolate the germ. The virulence of the aerobic cultures was so irregular that they were useless for vaccination in man. The serum obtained from the animals treated with them protected to a certain extent children exposed to measles. It failed completely when given on the first or second day of incubation. The best results (protection of 122 out of 134 children) were obtained when the injection was given between the seventh and eleventh day.

Experiences with Measles Antiserum.—Weise used Degkwitz' protective sheep serum in a sanatorium for tuberculous children. He believes that early administration is the most important point, but he obtained a mitigation of the measles even when injecting the serum up to the seventh and ninth day of incubation.

Syphilis Infection from the Cadaver.—Hoffmann points out that the spirochetes may live and multiply in the organs after death. Their movements—even in brains from paresis cases—persisted sometimes for days. Infection of a rabbit with 3 day old necropsy material proved successful. Syphilitic infection acquired at necropsy is not only possible but has been proven beyond doubt in seven cases, and is probable in seven other cases. He queries why such cases are so rarely reported. One reason may be the tendency of the infected physician to keep it secret.

Alimentary Glycemia and Water Metabolism.—Klein and Lang observed in patients with liver disease a steeper and sometimes higher glycemia curve and faster decrease when dissolving the sugar in 1,500 cc. of water instead of 250 cc. Some of the patients had glycosuria with the former technic.

Breathing Type and the Body.—Hörnicke favors the abdominal type of breathing for women. The rarity of chlorosis and of fainting spells at parties may be due to the rarity of tight lacing. Yet even a belt may cause trouble. He observed a higher blood pressure and more rapid respiration and pulse in healthy girls after work with a belt which did not cause discomfort at rest.

The Furnishing and Prescribing of Drugs.—Meinecke, who is president of the Prussian chamber of pharmacists, points to the higher expenses connected with proprietary preparations. He saw once the financial statement of an establishment concerning such a remedy: costs of manufacture, 300,000 marks; propaganda, 1,500,000 marks; profit, 200,000 marks. No wonder that a widely advertised "remedy for rheumatism," consisting of acetyl-salicylic acid and a trace of quinine—selling for 2 marks—represents really only a tenth of this value. The balance, 1.8 marks, is paid for the advertising and middleman. The patient who felt better, after taking a prescribed proprietary preparation, buys it the next time without consulting the physician, and so do his friends. Such prescriptions are convenient, but they injure the physician.

73: 227-268 (Feb. 5) 1926

*Venous Pressure in the Legs. E. Schott.—p. 227.
*Treatment of Emphysema. G. Ganter.—p. 230.
Anaerobes in Endocarditis. W. Lehmann.—p. 233.
*Photochemical Serum Test. H. Bültemann.—p. 238.
Treatment of Fracture of Leg. H. Marxer.—p. 239.
Gonococci in Lochia. A. L. Kaplan.—p. 241.
Adsorption of Gas by Charcoal. M. A. Rakusin.—p. 243.
Surgery of Phimosis. F. Dietel.—p. 244.
Dermatologic Drugs. M. Schubert and W. Baumgartner.—p. 245.
Fetal Inclusions. M. Budde.—p. 246.
Treatment of Ulcers. F. Schlunk.—p. 247.
Occupational Hygiene. L. Teleky.—p. 252.
*Prohibition in America and Tuberculosis. J. Donath.—p. 254.
*Prohibition in Russia. A. Dworetzky.—p. 263.
*"Uricoxydase of the Blood." L. Flatow.—p. 268.

Venous Pressure in the Legs.—Schott found about the same pressure in the veins of the foot as in the ulnar vein, taking the level of the auricle as the base. In standing, the hydrostatic pressure of the column of blood, beginning at the heart, is added to the dynamic pressure in the veins.

Treatment of Emphysema.—Encouraged by Reich's success in treatment of emphysema by a pneumoperitoneum, Ganter, reports on five emphysema patients treated with partial pneumothorax. It diminished the residual air and the patients felt decidedly better. After completion of his work, he learned that partial pneumothorax is being used in emphysema of horses. Schwenkenbecher attempted it once in a man but desisted, because the patient complained of severe pains.

Photochemical Serum Test.—Bültemann made Lange and Heuer's photochemical silver nitrate test with the serum from eighty-seven patients with gynecologic cancers, and controls. All the cancer serums gave a positive result. The reaction was also positive with septic diseases and in lactation; negative in pregnancy.

Prohibition in America and Tuberculosis.—Donath publishes American statistics on tuberculosis mortality. The notable decline which has continued ever since 1920 can be attributed only to the improvement of conditions in respect to hygiene. He concludes from this that the improvement is due to prohibition. He emphasizes that the hygienic, economic and moral beneficial results of prohibition are most evident in New York, Chicago and San Francisco.

Prohibition in Russia.—Dworetsky—after declaring that no communist would say that communism exists in Russia—points out that it may produce a peculiar impression to see that the soviet government, consisting, as he says, of idealists, has reintroduced hard liquors. Yet the situation was such that there was no other way. The prohibition of alcohol, which had been decreed by the czar, was effective at first, but the moonshine production of abominable stuff began soon. Poisonings, blindness, deaths followed. Cologne, denatured alcohol, furniture polish, were consumed in large amounts. At the time of the revolution the distillation was better, and in every peasant's home, as well as in the cities, stills were at work. Even the famine did not diminish the industry, since the peasant preferred hunger to the abandoning of the lucrative trade. The soviet government tried to stop the alcoholism and the wastage of vitally important grain by military measures. The only result was installation of better stills after the old ones were confiscated. The government then started to sell wines; later, beer. The moonshining flourished as before. Then the government tried to sell weak liquor. The Russians did not drink it. At last the government decided to put out the pre-war quality at a high price. It seems that this will end the moonshining and check the criminal element thriving in the trade. The government designated the health commissioner, Semaschko, to start an educational campaign against alcoholism, since the legislative and military measures failed completely.

"Uricoxydase of the Blood."—Flatow corrects his paper summarized in these columns, Feb. 27, 1926, p. 658. He has lately found it impossible to oxidize added uric acid. The oxidizable substance is precipitated by silver lactate, but does not redissolve in tenth-normal hydrochloric acid.

Wiener klinische Wochenschrift, Vienna

39: 149-176 (Feb. 4) 1926

Instincts. L. R. Müller.—p. 149.
Fourth Disease. K. Hochsinger.—p. 154. C'cn, p. 186.
Peptic Ulcer and the Test Meal. T. Bársony.—p. 156.
*Mastitis. E. Preissecker.—p. 158.
Pellagra in Carinthia. J. Matuschka.—p. 159.
*Death from Oil of Chenopodium. F. Suchanka.—p. 160.
Tumors of the Spinal Cord. K. Gross.—p. 162. C'cn.
"Children Who Won't Eat." J. K. Friedjung.—p. 164.
Treatment of Hypertension. A. Müller-Deham.—p. 164.
Toxic Skin Affections. S. R. Brünauer. Supplement.—pp. 1-24.

Mastitis.—Preissecker has encountered frequently Mathes' form of mastitis. It begins with a circumscribed redness of the skin, originating usually from a cracked nipple, with sudden high fever and spontaneous recovery in two or three days. He is opposed to preventive application of alcohol to the nipples. Soap and water—without rubbing—is sufficient.

Death from Oil of Chenopodium.—Suchanka's patient, a robust girl, aged 20, took about 10 Gm. of oil of chenopodium within a week. She became suddenly sick, later unconscious, and died in a few days.

Zeitschrift für Urologie, Leipzig

20: 1-80, 1926

*Posterior Urethra in Enuresis. I. Deutsch.—p. 1.
Hematuria with Gumma of the Kidney. M. Sirovicza.—p. 5.
Gynecomasty and Tumor of the Testis. G. B. Monaschkin.—p. 8.
Ureteral Calculus. E. Holstein.—p. 20.
Tuberculosis of the Kidney. R. Zimmermann.—p. 23.
Poisoning by Drugs Applied in the Urethra. G. Praetorius.—p. 43.
*Massage of the Prostate. J. J. Stutzin.—p. 59.

Posterior Urethra in Enuresis.—Deutsch observed a case of enuresis in an elderly man. Posterior urethroscopy revealed a large and anesthetic colliculus seminalis. The condition of the verumontanum returned to approximately normal after potassium iodide treatment. The rest was probably a sign of beginning tabes.

Massage of the Prostate.—In treatment of gonorrhea, Stutzin had about the same results without massage of the prostate, as with it.

Zentralblatt für Chirurgie, Leipzig

53: 321-384 (Feb. 6) 1926

*Disturbances from Use of Prosthesis. Zur Verth.—p. 322.
Lumbosacral Sympathectomy After Ligation of Popliteal Artery. Y. Osawa and G. Usami.—p. 326.
Repeated Perforation of Duodenal Ulcer. K. Borszeky.—p. 328.
Postoperative Retention of Urine. Wolff v. d. Sahl.—p. 330.
Perforated Peptic Ulcer. F. G. Meyer.—p. 333.
The Leukocyte Picture in Surgery. A. Sorkin.—p. 336.
"Surgery of Scoliosis." H. Plagemann.—p. 338.

Disturbances from Use of Prosthesis.—Zur Verth investigated the cause of the painful nodules and abscesses on the stumps after amputation of the thigh. The bacteriologic findings were negative, but Kyrle diagnosed from the histologic sections a granuloma due to the presence of foreign bodies. These are particles from the leather edge of the artificial limb, rubbed into the skin.

Zentralblatt für Gynäkologie, Leipzig

50: 321-384 (Feb. 6) 1926

Thymus Extract and the Uterus. N. Temesváry.—p. 322.
*Hyperthyroidism and Castration. O. Khoór.—p. 343.
Decidua in the Vagina. E. O. Schoch.—p. 345.
Sedimentation Test and Gynecology. G. Frommolt and L. Motiloff.—p. 348. Idem. O. Silzer.—p. 353.
Sedimentation Test and Adnexitis. N. Cukor.—p. 362.
*Lactic Acid in Placenta and Ovary. A. Loeser.—p. 363.
Gynecologic Forceps. O. P. Mansfeld.—p. 364.
Infected Abortion. F. Clauser.—p. 368.

Hyperthyroidism and Castration.—The symptoms of exophthalmic goiter improved in Khoór's patient after extirpation of a uterine fibroma plus uterus and ovaries.

Lactic Acid in Placenta and Ovary.—Loeser found with Warburg's apparatus a strong aerobic and especially anaerobic production of lactic acid by the human placenta. It was most pronounced in the organ from the earlier months. The ovary also produces lactic acid.

Zentralblatt für innere Medizin, Leipzig

47: 97-112 (Jan. 30) 1926

Clinical Aspect of Acute Leukemia. R. Jaksch-Wartenhorst.—p. 97.

Acta Medica Scandinavica, Stockholm

63: 195-300 (Feb. 11) 1926

*Progressive Amyotrophia. S. Wohlfahrt.—p. 195.
Treatment of Tuberculosis with Sanocrysin. V. Bie.—p. 220.
*Phenolsulphonphthalein Kidney Function Test. C. Lundsgaard and E. Møller.—p. 242.
*Excretion of Phenolsulphonphthalein in Circulatory and Liver Diseases. E. Møller and C. Lundsgaard.—p. 268.
*Fate of Phenolsulphonphthalein in the Organism. E. Møller and C. Lundsgaard.—p. 277.
Intracranial Aneurysms. H. Odqvist.—p. 286.

Progressive Amyotrophia.—Wohlfahrt encountered five cases, resembling the Charcot-Marie type, in one family, as

he describes. There were records of the same disease in two preceding generations—a total of ten cases in four generations, with eleven members escaping. Transmission was by both sexes, but a healthy member had healthy offspring. The patients said that their condition seemed to improve under moderate exercise and grew worse with repose. He reviews the various theories as to the etiology. In all, the knee-jerk was normal and there were no sensory disturbances.

Stain Test of Kidney Function.—Lundsgaard and Møller regard elimination in two hours of 70 per cent of the phenolsulphonphthalein injected by the vein as the lowest limit of the normal range. A liter of water should be ingested simultaneously with the injection of the dye. Decreased elimination of the dye is an early and delicate sign of incipient insufficiency of the circulation, either general or localized in the kidney. The interpretation of the findings is not dependable, however, if the output of urine is scanty or there is hypertension or other circulatory disturbance. The stain does not pass into edema fluids, ascitic, subcutaneous or pleural. In sixty-seven patients the excretion was protracted in circulatory diseases; the delay was most pronounced in cases with stasis in the liver. The same excretion curve was found in various forms of liver disease, with or without a failing heart. This and other findings suggest that the liver has much to do with the fate of the dye in the body. The elimination curve may throw light on anatomic and functional conditions in the liver, and thus prove a useful diagnostic guide.

Hospitalstidende, Copenhagen

68: 1069-1120 (Dec. 3) 1925

*Gold Salts and Experimental Tuberculosis. O. Bang.—p. 1069.
Treatment of Eczema. C. Rasch.—p. 1118.

Gold Salts and Experimental Tuberculosis.—Bang's verdict is unfavorable as to any specific action on tuberculosis from Sanocrysin. Møllgaard and others protest that he used doses universally conceded to be inadequate.

68: 1121-1144 (Dec. 10) 1925

*Growth Under High Oxygen Pressure. Fischer and Andersen.—p. 1121.

Growth of Normal and Malignant Tissue Cells Under High Oxygen Pressure.—Fischer and Buch Andersen relate that the metabolism of normal cells and of cancer cells is modified under the influence of augmented oxygen pressure, and the modification differs in the two groups. They reproduce a chart which shows these differences and the range of pressure-time findings which differentiate normal from cancerous tissue. They succeeded in inducing such modification of the metabolism in cultures of fibroblasts and chicken sarcoma tissue cells that the result was finally a pure connective tissue culture.

68: 1145-1160 (Dec. 17) 1925

*Influence of Chemical Light Baths on Bactericidal Processes in Blood and Serum. V. Genner.—p. 1145. C'cn, p. 1161.

Influence of Chemical Light Rays on Bactericidal Processes in the Blood and Serum.—Genner used the Finsen lamp or the quartz mercury vapor lamp to study the effect of radiation on the bactericidal power of the blood and serum. He was unable to detect any increase at all in human blood serum, and in rabbit serum only occasionally and so slight and transient that other causes may perhaps be responsible for it. Repeated irradiation showed increased bactericidal power in rabbits but he thinks the venesection accounts for this.

68: 1177-1196 (Dec. 31) 1925

*Calcium Content of the Serum. W. T. Andersen.—p. 1177.

The Calcium Content of the Serum.—Andersen found an average of 10.7 mg. of calcium per hundred cubic centimeters of blood serum in persons under 45 and 10.4 mg. above this age in his research on thirty-eight normal subjects or with normal blood findings. The range was from 10 to 11.5 mg., and the findings did not vary on repeated examination of the same subject, except during menstruation when the serum calcium was always increased by about 1 mg. The research was done at the Finsen Light Institute and the influence of the arc light in modifying the calcium content was sometimes unmistakable. With insufficiency of the kidney, the serum calcium was often low but not constantly; in one case this gave the clue to pathologic conditions in the kidneys although the function tests had elicited only normal responses. With hypertension without kidney symptoms, the serum calcium was normal or slightly above. It was below normal in the asthma cases and also with exophthalmic goiter, but in the latter group the preceding roentgen irradiation may have contributed to the low calcium figure. It was low also in two cases of cancer, normal in two others, and exceptionally high (21.8 mg.) in a case of metastatic cancer in the bones.

Ugeskrift for Læger, Copenhagen

88: 1-26 (Jan. 7) 1926

*Treatment of Tuberculosis with Metal Salts. N. Lunde.—p. 1.
Types of Meningococci. M. Kristensen and O. Moltke.—p. 10.

Treatment of Pulmonary Tuberculosis with Metal Salts.—Lunde refers to Walbum's method which he has applied in fifty-eight cases. The aim is to supply certain salts which are normally present, and which it is assumed are lacking in the tuberculous. He remarks that every sanatorium has had cases in which it seemed to require only a little stimulus to restore the normal balance and start the healing of the tuberculous process, and this treatment is a tentative groping after a stimulus of this kind. Manganese chloride, gold chloride, or beryllium chloride and calcium were the metals used in turn or separately, and the doses were minimal. No untoward by-effects were observed, and the general verdict is favorable.

88: 27-52 (Jan. 14) 1926

Experimental Hermaphrodism and Lack of Antagonism Between Sex Glands in Adult Fowls. Pézard et al.—p. 27.
*Reducing Power of Monosaccharids. S. A. Holbøll.—p. 28.
Kidney Functioning Under Sanocrysin Treatment. N. C. Lunding.—p. 30.
*Case of Helminthophobia. C. Gram.—p. 38.
Enterococcus Sepsis. A. Nyfeldt.—p. 41.

Reducing Power of Small Amounts of Monosaccharids.—This is Holbøll's eleventh communication on carbohydrate metabolism. He here charts the findings with the potassium ferricyanid technic in respect to glucose, galactose, fructose and mannose.

Helminthophobia.—Gram discusses the natural history of the oxyuris and ascaris in connection with the case of a young woman with a chronic neurosis which has taken the form of an obsession of infestation with helminths.

88: 53-78 (Jan. 21) 1926

*Danger of Intra-Uterine Injections. J. Fog.—p. 53.
Caustic Injury of Stomach with Intact Esophagus. Biering.—p. 58.
Anatoxin in Vaccination Against Diphtheria. S. Schmidt.—p. 61.
Types of Meningococci. F. Wulff.—p. 63.
Fate of Insulin-Treated Diabetics. T. B. Jacobsen.—p. 66.
Congenital Word Blindness. H. P. T. Ørum.—p. 73.

Dangers of Syringe Used to Induce Abortion.—Fog comments on the increasing number of cases of septic abortion in the hospitals in recent years, the diminishing birth rate, and the increasing number of medicolegal cases of abortion. He gives the details of nine cases of criminal proceedings on account of intra-uterine injections, and describes in detail the findings in eight cadavers in which death had occurred from measures to induce abortion, mostly the use of an ebonite "mother's syringe." As a rule, necropsy failed to reveal any direct injury responsible for the sudden death in these cases. The interval was short between the introduction of the syringe and the fatal collapse; only in one was it as long as five and a half hours. Embolism of the lung or pulmonary artery was not found in any of the cadavers. Fatal shock has been known from such interventions, but Fog thinks that air embolism was probably responsible for the fatality in these cases. It was beyond question in three of those examined with a view to this possibility, and as the findings in all the eight closely corresponded, it is more than probable that air embolism was the cause in all. Although three days had elapsed in one case, the heart still contained large amounts of air. The syringes commonly used for abortive purposes are liable to introduce considerable air with the fluid and induce high pressure.